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UNIVERSITY COLLEGES, GREAT BRITAIN—GRANT IN AID.

RETURN to an Order of the Honourable The House of Commons, dated 17 June 1897;—*for*,

COPY "of (i) TREASURY MINUTE of 3rd March, 1896, (ii) the REPORTS of 31st December 1896 by the INSPECTORS, (iii) the TREASURY MINUTE of 5th April, 1897, (iv) the REPORT of the COMMITTEE dated 20th May, 1897, and (v) the TREASURY MINUTE of 2nd June 1897, relating to the GRANT in AID of UNIVERSITY COLLEGES, GREAT BRITAIN."

Treasury Chambers, Whitehall, June 1897.

R. W. HANBURY.

(*Mr. Hanbury.*)

Ordered, by The House of Commons, *to be Printed*, 17 *June* 1897.

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Colleges, and whether the number of students in regular attendance on a University course is such as to show that the teaching offered is really desired and appreciated in the district served by the College.

5. Any recommendations for the amendment of the existing system, either general or in detail, which may suggest themselves as the result of the inquiry.

Mr. Chalmers' inquiries should extend to ascertaining:—

1. The income of each College from all sources, including the amount of pecuniary support given, whether by private subscriptions or out of local funds.
2. The amount by which the income in each case falls short of the necessary expenditure.
3. The manner in which it is expended; and
4. The proportion of income to the average number of students.
5. In connexion with the financial position of the Colleges, special regard will be paid to the possibility of making the amount of the annual grant in some measure dependent on the funds provided from local sources.

My Lords approve.

UNIVERSITY COLLEGES, GREAT BRITAIN.

I.—REPORT BY MESSRS. WARREN AND LIVEING.

MAY IT PLEASE YOUR LORDSHIPS, 31st December 1896.

We have visited the several Colleges named in your Lordships' instructions, have inspected their buildings and laboratories, and made ourselves personally acquainted with the character and quality of the University work done by each College, having regard to the difference between work of an elementary and that of an advanced nature, distinguishing this latter, as far as possible, from technical education, or any special kinds of teaching for which grants are made to the Colleges from public funds, and bearing in mind more particularly the heads of inquiry indicated by your Lordships, and we beg leave to report as follows:—

Introductory Remarks.

A visitation and survey of the several University Colleges of Great Britain have produced on our minds certain general impressions, and suggest certain general observations and remarks, which form, we think, a natural preface to our Report, and which we venture therefore to place here.

The University Colleges of Great Britain are a remarkable development, and have become a very important part, of the educational life and system of the country, University College and King's College in London were founded early in this century; the Owens College at Manchester will soon reach its jubilee; Bedford College is a little older; but the others have all grown up within the last twenty or twenty-five years. As will be seen by the financial table included in Mr. Chalmers' Report, they represent a total capital expenditure, from the first, of nearly two millions of money, and an annual expenditure to-day of 155,487*l.* They have an income from endowments of 36,962*l.*, and from fees of 65,302*l.* They are supplying education to a total of pupils, men and women, in Arts and Sciences, including Training College Students, which approaches to some six thousand; and in all departments, including Medical, Engineering, and Technical Students, to some twelve thousand.*

We are glad to feel able to say that, in our opinion, these Colleges are, to speak generally, doing good work, fulfilling their function and realising the purpose for which they were established, that, namely, of bringing education of an advanced and University kind to those who cannot go to the Universities to seek it, of forming a link between the Universities and the great commercial communities of the country, and of establishing, in the midst of these communities, centres of intellectual enlightenment and culture.

As such they are becoming, more and more, so many homes and rallying points of science and learning, offering, moreover, opportunities of advanced work and research, and in their libraries, museums, laboratories, and other equipments, providing appliances for, and instruction in, the proper methods of investigation, and altogether in some measure doing in England, for higher studies, what has been done with so much success in Germany by her many Universities. They have exercised, and are exercising, in particular, certain influences, both general and special, which may be noted in some detail.

They are affecting all, or most, of the provincial schools of professional training, giving them more of a uniformly high standard and scientific character.

Thus, in particular it should be noticed that almost everywhere the provincial University College has drawn into friendly and fruitful relations with itself the provincial Medical School, an alliance whereby these several schools, already otherwise greatly improved, gain much of the advantages which have hitherto been the peculiar privilege of medical schools existing in connexion with Universities, advantages in the past rather wanting in England. It need hardly be said that by such unions the Colleges receive as much as they give. **Effect on Medical education.**

In the same way when they come into contact with Legal education they affect it for the better, giving to it something of a liberal and academic character. **Legal education.**

To the Lords Commissioners of
Her Majesty's Treasury.

* These figures are of course only approximate.

Engineering, architecture, and art.

They are affecting too, and very beneficially, the study of Engineering, and in some cases also that of Architecture and the Fine Arts.

Training of teachers.

Another duty which they are undertaking, and with much advantage to a profession and to themselves, is the education of a number of students who are being prepared for the calling of the teacher. The effect and value, to a large number of the elementary schoolmasters and schoolmistresses of the next generation, of being under something like University influences, and of studying many of their subjects side by side with students pursuing them for other objects, under professors and teachers of first rate ability who have made these subjects their lifework, is incalculable. It is much to be desired that a similar combination of special training with liberal studies should be made available for the teachers in secondary not less than in elementary schools.

Denominational Colleges.

For the same reasons we rejoice to see that, in many instances, these Colleges have drawn around them the Denominational Colleges and Seminaries of the district, and that the students of these institutions are receiving much of their instruction in the general classes, and associating freely with, and partaking in the life of, the students of the University College.

Education of women.

The work again which the Colleges are doing for the education of women, enabling, as they do, women students in various ranks of life to obtain an education of something like a University kind, without the difficulties and expense of leaving their homes, is so obvious and well known that it need hardly be emphasised.

Evening classes.

It may, perhaps, be further noted, that while the tendency of the day students at these Colleges is more and more to become regular students, and to attend prescribed combinations of lectures, involving a considerable expense in time and money, by their evening classes, these Colleges provide instruction at such hours, and in such amounts, and at such cost, as to be available for students who are engaged during the day, and whose command, alike of spare time and money, is very limited. It should be remembered, however, that this is not done without a considerable strain, in some cases where the Professors are few, almost too great a strain, upon the staff of the Colleges.

Extension lectures.

Further, not a few of the Colleges, by systems of Extension lectures and the like, carry their educational work into the smaller towns which surround their own, or into the neighbouring rural and agricultural districts.

Relation to the older Universities.

It may be noted also that the rise and prosperity of these Colleges, whether connected with or federated into Universities of their own or not, has not been brought about at the expense of previously existing Universities. On the contrary, we find that most of these Colleges are largely manned by Professors drawn from the older Universities, that there is a frequent interchange of teachers between the two sets of institutions, and also that almost all of these Colleges from time to time send students, whether men or women, to those Universities, while it hardly needs to be said that the creation of an increased learned and scientific public, provided it is not forced so as to pass natural limits, is of advantage to the cause of learning and science in the country at large. In two cases, one in England and the other in Scotland (though there the process has been for a time interrupted), a University College established in close relation with an old university, while itself profiting very greatly by the connexion, has seemed likely to add something of new and extended life to the older institution.

Scholarships and prizes.

It is a common feature of these Colleges to offer Scholarships and prizes to aid, stimulate, and reward meritorious students. The Colleges differ very much in the amount of provision of this kind which they enjoy. The older and larger are naturally, as a rule, the better provided, but this is not altogether the case. There is still a considerable opportunity for public and private benefaction, to make good defects or supplement the existing provision.

Associateships.

Many of the Colleges further offer, as one mode of recognition and reward of successful effort, the position of "Associate of the College," which may be called a kind of informal *degree*. The conditions on which this title is given vary somewhat from College to College. We have no means of determining what value is attached to it, but it would seem in most cases, to judge from the lists of holders, to be carefully and usefully bestowed.

General and wider influences.

It need hardly be added that the educational influence of institutions like the University Colleges is not confined to the direct effect of their definite courses of teaching or instruction. Much is gained from contact with the mind and character of the teacher, and much again from the intercourse of student with student, something,

and this will increase as time goes on, from the traditions, more from the general social life, of the College. It is not to be expected that these influences should be so strong as under the more special conditions of University "residence," more particularly when combined with the College system, and a sense of corporate life has still, in more ways than one, to grow up; but we have been very much impressed by the indications of its commencement in not a few cases, and by the evident endeavour on the part of the authorities to promote and cultivate these influences, and others yet more extended. Thus we find almost everywhere a number, and in some Colleges a very large number, of societies, and clubs, literary, scientific, social, and athletic, and we find the professors and staff of the Colleges in many cases joining in and acting upon the Committees of these societies, and generally giving much of their time to making them living and effective. These societies are largely open to and managed by women students as well as men. It is well worthy of remark that in some cases microscopic and field naturalists' societies among working men have been the outcome of the evening classes held by the University College. It need not be said that the maintenance of such institutions is in itself a part and no small part of an education.

Heads of Inquiry.

Coming to the special heads of inquiry indicated in your Lordships' instructions; while we understand it to be our duty to report separately upon the several Colleges, and have, therefore, done so, we find that there are a certain number of statements and observations falling under these heads which we have to make in common with regard to all or almost all of the Colleges, and which we think it will be more convenient to place first.

Quality of work done.

I. As regards "the quality, character, and results of the work done at each College" our report under this head will be best given, and will be found, in the separate report upon each College. We may say, however, in general, that we have in most cases found a considerable body of work of a distinctly University type being done by the several Colleges, and that such work was good of its kind.

Educational equipment. Staff.

II. The Professorial Staff of these Colleges may be said, speaking generally, to be of a high standard of excellence, including as it does many men of mark, and some of great eminence as specialists, and many distinguished teachers. The Lectureships and Demonstratorships at these Colleges, it need hardly be said, offer most valuable opportunities for young men of good aptitude to pursue the study of their subjects, to execute researches and investigations which they could not carry out without the means provided by the Colleges, and generally to qualify for the highest scientific work. It may be remarked parenthetically that not the least of the services which these Colleges have rendered to the country is to be found in the opportunity which they have given to some of the very best among living investigators and teachers to discover and develope their own powers.

Regard must be had to this fact in estimating the emoluments generally, but more particularly in considering those of the Junior Lecturers and Demonstrators, especially those in connexion with Physical Science, who have the use of the Laboratories and appliances of the Colleges. Taking the emoluments generally, whether of Professors or Lecturers, they will be found to be on a modest scale. They are somewhat larger on the Scientific than on the Arts side, more profit being made from fees. In a few cases only, where the subjects are such as to attract a very considerable number of pupils, is the remuneration large, and in not a few cases it must be pronounced decidedly small. Taking the Colleges altogether the number of endowed Professorships is very small.

Want of Pensions.

It may be noted that there does not seem to be any general system of pensions for Professors who may become incapacitated or past work. This seems to be a serious defect; the want of such provision can hardly fail to be increasingly felt, and may become a real difficulty as the Colleges, many of which are still young, grow older.

The number of the staff varies very much in the different Colleges. It has been influenced by the history of the individual Colleges, and still more by the means at their disposal.

We have found hardly any College where, in our opinion, the staff is in excess of the permanent average requirements, and there are not a few cases in which we think that

further assistance, or sub-division of subjects, is much required. These we have indicated in our reports on the individual Colleges.

Buildings. Speaking generally, and subject to the qualifications indicated in our special reports, the buildings of these Colleges may be pronounced suitable, and sufficient for their purposes. It need hardly be said that they differ very much according to the history and general pecuniary position of the several Colleges. The provincial Colleges have the advantage over those of London in point of space, and are almost all decidedly well and conveniently situated.

Laboratories and class rooms. The provision of Laboratories is on the whole very good, more particularly in the provincial Colleges, where not a few of them have all the advantage of being newly constructed, designed for their purpose, and thoroughly adapted to modern requirements. They are mostly well equipped with the needful apparatus.

The Colleges differ very much in their supply of Theatres and of Class-rooms, more particularly on the Arts side; in not a few the studies in Arts being of later development, have had to find provisional accommodation in such rooms as can be borrowed from the scientific departments. In the larger Colleges they enjoy all or almost all the accommodation that they can require.

Libraries and museums. An important part of the proper equipment of these Colleges is a Library, and Museum or Museums. In regard to such equipment the Colleges it will be seen differ a good deal. In almost all cases a larger annual sum is needed than can be provided out of present funds for the maintenance of the Library. In some cases the wants of the College are to some extent met by external institutions, but these cannot be regarded as altogether supplying the place of collections within the College, and under its direction and control, although on the other hand they are not seldom more extensive than anything which the Colleges could themselves house or maintain. It appeared to us that in all cases such Libraries as the Colleges possessed were being well used for purposes both of reading and reference.

Almost all the Colleges have made some commencement in the provision of scientific Museums, and in particular are developing excellent collections of preparations made within their own walls, but almost all experience the want of funds to enable them to extend their collections, and perhaps even more to arrange and make available those which they already possess, or may from time to time acquire.

For the comparatively elementary work of education, the illustration of lectures, &c., the present arrangements are in most places sufficient, or nearly so, but more is needed to make these Museums what they might with advantage be, namely efficient and characteristic provincial centres, for research, and advanced scientific study and comparison.

Private and common rooms. It may be noted that the Colleges differ very much in regard to the accommodation provided for the Professors, whether in the way of private or common rooms, and it should certainly be remarked that in almost all cases the provision of necessary buildings for teaching, and for the general working of the Colleges, have evidently been first thought of. Almost everywhere an attempt has been made to provide suitable common sitting or reading rooms for the students. In some cases there are refectories or arrangements for the supply of meals to the students at their own cost during the day.

Residence. A word may perhaps be added with regard to the provision for students coming to reside for the purpose of attending the Colleges. In two cases only, those of two Colleges in London, are students lodged within the walls. In some other places there are Hostels, or Halls, for residents, male and female respectively, and most of the Colleges make an arrangement as to registered lodgings for students. But in no case does the cost of any provision for residence fall upon the general or external revenues of the College.

Provision for women students. With regard to the education of Women Students, the only College for both sexes which provides an entirely separate set of buildings for its women students is King's College, London, which has its Women's Department in Kensington Square, where it provides not only lecture rooms, but also Biological and Chemical Laboratories. In most cases the general buildings of the College are used by both men and women students alike, except that the women and men have separate common and reading rooms of their own. The arrangements at the Owens College, Manchester, which differ somewhat from those elsewhere, are noted in the special report on that College. Bedford College of course provides only for women students.

III. The fees are distinctly higher in the London Colleges than in those of the provinces, although the fees at Bedford College have been, as is noted elsewhere, lowered since the receipt of the Government Grant. Fees.

The fees at Bristol also are somewhat higher than those of the three Victoria Colleges, and of the Colleges at Birmingham and Newcastle, which again would seem to be somewhat higher than those of the Nottingham and Sheffield Colleges. The fees at the Owens College would seem to be slightly lower than those at the two other Victoria Colleges, viz., Liverpool and Leeds.

We found evidence of but few instances in which the students coming to these Colleges were unable to pay the fees charged. Poor students are, of course, to some extent, helped by scholarships, but the number of scholarships is not very large. We were told, however, and it would seem likely, that the much lower fees, and the greater cheapness of living, at the Welsh Colleges, draws a certain number of students from some of the nearer of the English Colleges.*

The regular students taking the full ordinary courses appear to be usually drawn from what is commonly called the middle class. The Training College students are of a lower social standing, while the occasional students are often of a higher grade, and subjects such as Engineering, or some of the technical courses, which fit students for special forms of manufacture or business, also attract students of a higher social position. It may be noted here that the fees for the technical classes are not seldom higher than those charged for subjects of general culture.

In no case did we find that the authorities were of opinion that the fees would bear increasing, a slight increase contemplated at Newcastle, in the interest of the College Library, being so small as hardly to form an exception to this statement. In some cases, such as the Yorkshire College, the College would like to reduce the fees, thinking that this would bring more students, but is afraid of the loss of income. In London, on the other hand, at University College, the feeling seems to be against such reduction, and we were told that when actually tried it had the effect of reducing rather than increasing the number of students. On the whole the scales of fees seem to have been arrived at after a good deal of consideration of what will suit the clientele of the College, and of the competition of other bodies, and considering the various circumstances of the Colleges, as regards their endowment, history, and general position, we do not feel ourselves able to make any recommendation as to any substantial modification, but rather think that the Colleges should be left to settle this matter for themselves, as they have done hitherto.

IV. The Colleges seem on the whole to agree very closely in their definition of subjects of University rank, and in their estimate of the character of a higher liberal education, and generally in the ideals they propose to themselves. It is evident that the examinations of the University of London have exercised, and still exercise, a great influence in determining the curricula. The three Colleges composing Victoria University have now, of course, in an increasing measure, a system and ideals of their own, which seem to stand midway between those of an examining and a teaching University.† Definition of subjects of University rank.

The great advantage of their system seems to be that the students go through prescribed courses of instruction, for which the Colleges are responsible, and that the Colleges have thus a direct control over the work of their students, and an educational influence is exercised which cannot be produced by the mere preparation for an external examination.

The desire for a teaching University, and for control of the Degree examinations of which they make use, seems to be strong in the London Colleges, while in the Provincial Colleges, in proportion to their strength, there seems to be a similar desire for the power of granting their own degrees, accompanied by partial, or even total, independence.

One of the most creditable and valuable influences which the University Colleges have exerted is, in our opinion, to be found in their desire and attempt, when dealing with the more technical subjects which naturally come within their province, to do so in a truly scientific spirit, and to make these subjects in themselves part of a liberal education. This is to be seen particularly in the case of the teaching of Engineering,

* Students, we were told, have left Bristol for Cardiff or Aberystwith, giving as their reason the lowness of the fees.

† A very noticeable and interesting feature of the Victoria University is the combination of "internal" with "external" examiners.

approached from its theoretical side, which, in the Victoria University, may be taken as one of the branches of study for which the degree of B.Sc. is granted, the Colleges giving a very thorough training in the sciences which bear on engineering, both mathematically and experimentally treated, without any attempt to teach the practice of the profession. It cannot be doubted that the mental discipline and the scientific knowledge acquired in this course would be very valuable to everyone, even if he should not ultimately make engineering his profession. It is worth noticing that in the examinations of the Victoria University for the degree of B.Sc. in the Engineering section, many of the questions are such as might be proposed in the examination for the Mathematical Tripos at Cambridge. To a less extent a somewhat similar judgment might be passed on the treatment of some other subjects, which are primarily studied with a view to their useful application. On the Arts side, in the same way, many of the Colleges deserve praise for their handling of the teaching of Modern languages, in which they have kept before them the ideal of literary, philological, and scientific treatment, as opposed to mere grammatical and linguistic training for utilitarian purposes.

Duration of course.

The University Colleges all adopt three terms in the year. There is some little variation as to the dates at which these begin and end. Roughly speaking, each term is of the duration of from 10 to 11 weeks. All the English Colleges begin their year about the first week in October, and close about the end of the first week in July, or sometimes earlier. The latter weeks of the summer term are generally a good deal occupied by examinations. The full course of study generally extends over three such years. In the Victoria University attendance at lectures during a period of three years constitutes one of the necessary qualifications, equivalent to the residence at Oxford or Cambridge, for a degree. For the Associateship of these Colleges a similar attendance in some cases of two, in others of three, years is required.

Matriculation.

With regard to matriculated, occasional, and other kinds of students, Matriculation in the Victoria University is defined as consisting in "enrolment on the Register of Scholars in the University," and no student is held to have entered on a course of study for a degree in a College of the University until he has matriculated. As a rule no matriculation examination is held for students above the age of 16. In fact, matriculation, so far as the Colleges are concerned, means no more practically than registration, and the real distinction in these Colleges is not between matriculated and non-matriculated students, but between day and evening students, and between students taking combinations of courses arranged and prescribed by the College, and those who take isolated courses of their own choice. These last are, properly speaking, occasional students. The tendency, in our opinion a good one, is more and more for students to follow regular courses arranged by the College. The day Training College Students fall under the class of regular students; they are distinguished by having their own subjects and examinations to pursue in addition to those which they take in common with the other students at the Colleges.

The increase in the number of regular students must be borne in mind in estimating the increase or decrease in the numbers of students generally. This point will be best considered in dealing with the individual Colleges, but on the whole it may be said that the attendance at these Colleges during the years of their existence has been such as fully to justify the conclusion that they meet a real want, and that they are becoming more appreciated as they become better known.

General recommendations.

V. One result of our visitation and inspection of the Colleges is certainly to impress upon us the value of a degree, alike in attracting students and in giving point and direction to their education. Whether at the three Victoria Colleges, or at Newcastle, or again at Dundee where there has been the singular experience of a degree accorded for a time and afterwards withdrawn, the advantage possessed by those Colleges which have in any sense degrees of their own seems unmistakeable.

Some years ago, in the earlier days of the provincial University Colleges, considerable hopes were built upon the system of "affiliation" to Oxford and Cambridge, by which a period of residence at the University College was to be recognised in lieu of part of the residence required for a degree at the old Universities. In actual experience however, this system has not borne fruit, and indeed, as regards the English University Colleges, has remained practically a dead letter.

On the other hand the federation of the three Colleges at Manchester, Liverpool, and Leeds in the Victoria University seems so far to have been very successful, and appears to us to be fraught with much advantage to the Colleges and to education, more

particularly in giving to the Colleges definite aims and recognised standards, while at the same time enabling them to organise their courses of instruction with a view to a liberal education and general culture. No doubt such a federation has its disadvantages; the circumstances and needs of the individual Colleges differ somewhat, and may at times even come into conflict, and a considerable amount of time and money is expended by the Principals and members of the Staff in travelling to and fro, and in arranging and working a complex system of Boards of Studies and Examinations. But the gain to the Colleges, more especially the smaller ones, from the larger number of students, and consequently wider area of competition, from the intercourse of teachers in the same subjects, the larger supply of persons fitted to be internal examiners, and generally the greater variety and wealth of interest secured, in our opinion far more than counterbalances the loss thus involved, and gives to the *curricula*, and even more to the degrees, a value and prestige which they could not otherwise possess, while there is an obvious economy of working in having one University and Examination system rather than many. While, then, we think that Universities, like hypotheses, ought not to be needlessly multiplied, we are of opinion that the true solution lies in the close union of Colleges with existing Universities, or the federation of a reasonable number of Colleges conveniently situated into a University of their own. We are therefore inclined, upon this, amongst other grounds, to support the demand for a teaching University of London, in which the London Colleges should take their place; and also to think that combinations or federations similar to that of the Victoria University might with advantage be formed, embracing others of the University Colleges.

University College and King's College, London, already combine for the teaching of modern Oriental languages. Were a teaching University of London established, some more general economy might doubtless be effected in the professorial staff of the different London Colleges, more especially in subjects where the classes are small. In the meantime it has certainly occurred to us that more co-operation in teaching than at present exists might take place between University College and Bedford College, with advantage to both.

We have found that in more than one instance there is a good deal of overlapping and undue rivalry between the University Colleges and other educational institutions in the places where the Colleges are situated. In the earlier days of the Colleges a good deal of jealousy of them was felt by the leading Schools in their neighbourhood. That, in many cases, if not everywhere, has happily passed away, but a more serious difficulty and danger remains. The Colleges have been lately, in more than one place, confronted with the competition of Technical Schools or Institutes, founded and maintained, often at great expense, under municipal or other auspices. This conflict between rival interests in the same place, involves an amount of educational waste which is much to be deplored, and it is obviously desirable that steps should be taken to prevent or remedy such a state of things. In some cases the difficulty has, from the first, been happily solved, and in others mutual concession and understanding already afford good hope of its solution. The proper representation of municipal or local authorities on the Councils of the Colleges, and reciprocally of the Colleges on the educational boards, or authorities, in the areas which they respectively serve, might do much to bring about more harmony and economy.

Another point, not unconnected with this, is the desirability of removing the limitation which at present exists, of grants made by County Councils, to Technical instruction, preventing, as it does, young persons, who show capacity for profiting by higher instruction in Literature or Science, from holding County Council scholarships at the University Colleges. It is obviously undesirable that these grants should be so limited, and we were told of many instances in which the limitation operated most injuriously, or in which indefensible subterfuges were resorted to, in order to escape from it.

Indeed we have been much impressed with the development which has been and is taking place in the studies on the Arts side of the Colleges we have visited. This is particularly noticeable in the provincial Colleges, and it is the more remarkable when it is remembered, that in many of these Colleges, the existence of an Arts side at all is a matter of recent growth, the Colleges having often been started as colleges of Science alone. This was the case at Leeds, Birmingham, and Newcastle, while at Sheffield there was originally only one Professor in Arts. It might be expected that science should appeal more strongly to the instincts and sympathies, manufacturing or commercial, of the communities in which these Colleges are placed, and further that the operation of the Technical Instruction Act above noted should foster technical education, to the

neglect of Science and still more of Arts. Yet, notwithstanding these difficulties and drawbacks, we find an increasing demand for such subjects as History, English Language and Literature, French, Latin, and even Greek. With regard to these last two languages, it is noticeable with what rapidity willing and diligent students of mature age acquire a very considerable intelligent acquaintance with them, an acquaintance often contrasting very favourably with the knowledge shown by pupils who have been employed upon them for many years at our public schools. It is curious, on the other hand, that the study of German hardly seems to find, in many Colleges, the favour which might have been expected among scientific students, or in commercial communities.

We do not wish, however, to make any special recommendation in favour of these or any other studies. What is to be desired is, that all should have a fair field, and that public money should be available, without undue preference, for each and all, according as educational experience and wisdom, having regard to different localities and varying circumstances, may prescribe.

In concluding this general portion of our report, we have to express our very sincere thanks to all connected with these Colleges, but more especially to the Principals, Teaching Staff, Treasurers, and Secretaries, for the way in which they have everywhere received us, have endeavoured to give us every opportunity of seeing, hearing, and learning all that we desired, have furnished to the best of their ability, whether on the spot or by letter, every information asked for, and generally done what in them lay to facilitate our task and render it agreeable.

We proceed now to submit to your Lordships our separate reports upon each of the fourteen Colleges named in your Lordships' instructions, together with two Appendices arranged in a tabular form, the first, appendix A., showing as far as we have found it possible to do so, the comparative expense at the several Colleges of corresponding courses of instruction; the second, appendix B., displaying, under various heads, certain figures relating to the numbers of students to be found at the several Colleges.

Hoping that this arrangement of our Report may conduce to clearness and may meet with your Lordships' approval, we have the honour to subscribe ourselves.

Your Lordships' obedient servants.

T. H. WARREN, M.A.,
President of Magdalen College,
in the University of Oxford.

G. D. LIVEING, M.A., F.R.S.,
Fellow of St. John's College, and
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Reports on the several Colleges.

(1.) UNIVERSITY COLLEGE, LONDON.

University College, London, which, founded in 1828, has now had a history of nearly 70 years, is a place of learning of some considerable prestige and tradition, and can make good the claim, which it puts forward, to have been in a sense the pioneer and model of the University Colleges throughout the country. It has produced during the years of its existence many *alumni* of much distinction, and some of great eminence, alike in literature and science and in affairs, and has contributed not a little to the education and to the intellectual life of the country. At the present moment it possesses, as it has done in the past, a staff of Professors and Teachers of recognised and in many cases very special merit, and it has always endeavoured and still endeavours, whatever its means, to maintain a high standard of learning and teaching, and to encourage with comprehensive liberality the general advancement of knowledge and culture.

It goes almost without saying that with such a body of Professors the quality of the teaching in the advanced classes is of a high order. But it should be added that the Professors do not spare themselves in their endeavours to impart instruction to beginners; and though, on a superficial view, it may seem wasteful to employ the powers of such men in elementary teaching, nevertheless it cannot fail to be of advantage to the learners to have their studies directed by master-minds in their respective lines.

The standards proposed are generally those of the examinations for the London University degrees, to suit which the classes and lectures are arranged. For various reasons, however, there is a growing tendency—not in our opinion an unhealthy one—for students to study independently of these degrees, and the results of the work of the College, therefore, must not be too exclusively estimated by the number of graduations in the University of London, whether Pass or Honours. At the same time it may be remarked that such students as present themselves for these degrees attain a satisfactory and creditable measure of success.

On the Arts side especially, students of marked promise are now much encouraged by the Professors, who act in this matter in a self-denying spirit, to proceed to the older Universities, and the many distinctions won by them there afford another proof of the excellence of the training given in London. On the Science side, in most or all of the departments, there are advanced students who continue their work under the guidance of the Professors, or engage in research under their direction. In this respect again the College is rendering service of the highest value both to education and to the advancement of knowledge. It is noticeable, too, that the Professors, although the College is not residential, and although they are apparently in no way bound to do more than deliver their lectures and conduct their classes, are in the habit to a large extent of acquainting themselves with, and interesting themselves in, the individual needs of their students. We were informed that they do what they can to assist the students in their debating and other societies, and generally to encourage their intellectual tastes.

In addition to the examinations of the London University, with their Honours and rewards, University College has a considerable number of Scholarships and Prizes in various subjects, and a well-arranged system of class examinations of its own. The papers for these, which we have perused, are of a sufficiently advanced and testing character, and of University type.

Staff.

The Professorial Staff on the Arts side comprises Professors of Latin, Greek, Comparative Philology, English—in which language there is also a Lecturer,—Archæology, Egyptology, Hebrew, French, German, History, Political Economy—in which there is also a Lecturer—Mind and Logic, Law (Comparative); Roman Law, Constitutional Law, and Jurisprudence, and a Lecturer in Italian. In Mathematics there is one Professor of Pure, and one of Applied Mathematics, and each has an assistant. There are also Professors of Architecture and of Fine Art, and there is further a very complete Oriental School, comprising Professors and Lecturers in Arabic, Bengali, Gujarati, Hindi, Hindustani, Marathi, Pali, Persian, Punjabi, Sanskrit, Tamil, Telugu, and in Indian Law and History.

On the Science side, of Physics there is one Professor, an assistant Professor, and two Demonstrators, of Chemistry there is one Professor, an Assistant Professor, and two other assistants. For each of the subjects of Zoology and Botany, there is one Professor, an assistant Professor, and one Demonstrator. For Physiology there is one Professor, who has one principal assistant, a second assistant, and about six student-demonstrators. Of Geology there is one Professor unassisted. In many cases advanced students give unpaid assistance in the Laboratories, or prepare specimens for the Museums.

The emoluments of these Professorships are somewhat unequal. To some few there are attached very fair endowments; but others, amongst them some of the most important, are entirely unendowed, and depend partly on fees, partly on the existing Treasury Grant, of which two-thirds are allocated to them. Even with this addition none of the stipends are very large, and those of the Professors on the Arts side are comparatively small, that of the best paid being little more than 500*l.* per annum, while the income of one or two must be regarded as merely nominal or honorary. This is the case with the Professorship of History, which important subject can therefore hardly be regarded as being at present adequately provided for. But few of the assistants have any endowment or permanent position in the College, though some derive part of their income from sources not appropriated to assistants. For instance, the Assistant-Professor of Botany is the Quain student. In general an assistant is appointed on the recommendation of the Professor, and is paid wholly or in part by him. Such payments, of course, reduce considerably the net incomes of the Professors. Moreover the sums allowed for apparatus are not always adequate, so that the Professors have to supplement them from their own incomes.

We should hope that hereafter some new Professorships might be added. More subdivisions and further Professors are needed if the staff is to be complete in certain subjects such as Philosophy and History.

It may be added that it has been part of the policy of the College to foster and encourage science and learning, by giving the status of Professor to distinguished students and teachers, even when little or no emolument could be guaranteed; and also to elect to its Professorships men of distinct intellectual and scientific eminence rather than of merely popular gifts. Indeed, in no College has the advancement of knowledge for its own sake, as the ideal of University work, been more distinctly kept in view.

Buildings.

The Buildings on the whole can be pronounced commodious and convenient, and adequate for their present purpose, though not at all more than adequate.

On the Arts side, including Mathematics, the Lecture and Class Rooms seem to be, speaking generally, sufficient and well adapted for their purpose, the rooms being particularly airy and well lighted.

For Physics there are excellent laboratories of modern construction, and a cabinet of physical apparatus, of which the students have the use. For Chemistry the buildings are old-fashioned, and the rooms, though numerous, are neither so large nor so good as they should be; nevertheless very excellent and important work can be, and actually is, carried on there. For Botany the laboratories seem adequate for present needs, both in size and fitness, but there is no room for expansion of the practical class, or for an extension of the excellent collection of specimens which now occupies the whole of one side of the class-room. For Zoology there is a good Museum with a collection of specimens of more than ordinary interest and importance; the working laboratories are hardly proportioned to the magnitude of the class, but it is evident that excellent work is done in them. The Physiological Laboratories are modern, and well suited for

their purpose, especially for research work. More space for the practical work of the general class is desirable. For Geology there is a large, well-lighted room which serves both as Museum and lecture-room. The collection of Geological specimens is very considerable, but there is no curator to catalogue and arrange them, and they are consequently of less use then they might be. The Engineering Laboratory is new, excellent and well equipped.

Museum.

There is no general Museum, but there are Departmental Museums of special excellence.

Library.

The Library arrangements leave something to be desired. The main Library is barely sufficient in point of accommodation for the number of readers who frequent it, and in some cases students have been driven to seek permission to read in the Professors' rooms. It would be an advantage too if some of the outlying Libraries, of which there are four, could be more closely combined with the main Library. The annual income of the Library from all sources is insufficient. At present no charge whatever is made for the use of the Library. A portion of the existing Treasury Grant is expended on the Library.

We may mention as an addition to the amenities of the College the fine gallery and collection of Flaxman's sculptures and designs. The provision of private and common rooms for the Professors is fair, but not more than fair, certainly not luxurious. It may be mentioned that a very considerable portion of the site belonging to the College is taken up by the College School.

Fees.

The fees appear to be distinctly high, a full Arts course for the Session in the senior class amounting to about thirty-one guineas, and a Science course to about forty-five. This, however, is partly due to the number of subjects required simultaneously in the London University Examinations. It does not appear that the fees could well be reduced, having regard to the financial position of the College, nor would the classes from which the students are recruited seem to demand such reduction. There are occasional instances of very poor students who have risen from the ranks, or whose circumstances have become reduced; but the majority seem able to afford the fees charged, and the experiment of reducing them, when tried in some instances, did not, we were informed, attract larger numbers, but had rather the contrary effect.

Duration of Courses.

The majority of the students pursue a course of three years' study at the College, a few of the most advanced extend it to four years, while there are some who come for special instruction in some particular branch, and stay only for one session. These last, however, form a minority, and that not a large one, of the whole body of students. The academic year includes two sessions, a winter session of two terms of 11 weeks each, and a summer session of one term of ten weeks.

Number of Students.

There were in the Faculties of Arts, Laws, and Science, in the Session of 1895–6 747 students, including Engineering students. The numbers of men and of women students during the last few years seem to have been nearly equal. There does not appear to be under present conditions much probability of an increase in the number of the students, now that most of them are drawn from London. The competition with other institutions, especially in regard to Science, with the Schools of the Science and Art Department at South Kensington is severe, while as regards students in Arts, and more especially students of Literature and History, there can be little doubt that since the removal of tests, the older universities with their large endowments, and not less with their historic traditions, amenities of situation and mode of life, have drawn off a number of students belonging to classes who frequented University College in days when those institutions were closed against them.

It cannot be said that there is any special district served by the College, except perhaps that it serves the whole of London, and to some extent the Home Counties. At one time a number of students came from a distance, and from all parts of the country,

but the growth of provincial University Colleges seems to have diminished this kind of attendance. Thus, few now come from Wales, which at one time supplied a great many. London being what it is, the question of local appreciation or support hardly arises in the case of University College.

There is no *matriculation*, and consequently no distinction between matriculated and non-matriculated students. The distinction is rather between those who take one, two, or three, or more courses of lectures or classes. By far the larger number, considerably more than half of the whole number, take three or more courses. Very few take only two, but there is a larger number taking only one. In addition there are occasional students, often of an advanced kind, coming to pursue some special branch of study, or students who come to improve their general cultivation. Thus the subject of Egyptology, under the able and interesting direction of Professor Flinders Petrie, attracts as many as 40 students, of both sexes and of all ages.

There is no residence for male students at present in connection with University College, but there is a residential hall for women, in which about thirty students find accommodation.

The Professors of University College appear very strongly to desire to see established a teaching University for London, of which they and their College should form a part. Their chief reason for doing so is apparently the wish to exercise some control over the degree examinations, with the syllabuses and curricula for which their students would enter. At present, as is noted above, they are less and less inclined to prepare their students for the Degree examinations of the London University. It is, perhaps, natural that we, as members of the older Universities, should sympathize with their view, and should be inclined to recommend the taking of any steps which would tend to place them in this position or give them this control.

T. H. W.
G. D. L.

(2.) KING'S COLLEGE, LONDON.

King's College was founded by Royal Charter in 1828, and has therefore a history of some sixty-eight years. In 1882 the original Charter was annulled by the King's College Act, but at the same time the College was reincorporated with some additional powers, enabling it, among other things, to extend its education to women. During the course of its history it has enlisted the services of many very eminent men as members of its Council, as Principals, or Professors, or Teachers; and it can claim to have educated a very large body of students, among them, many who have been very highly distinguished, and to have contributed not a little to education, learning and science.

Its system is remarkably comprehensive, including the following divisions :—

I. The Faculty of Theology.
II. Arts, including Oriental Language and Literature.
III. The Faculty of Science, including—
  A. the Division of Engineering and Applied Science.
  B. the Division of Natural Science.
IV. The Faculty of Medicine.
V. King's College Hospital.
VI. The Evening Classes.
VII. The School of Art.
VIII. The Civil Service Department.
IX. The School.
X. The Ladies' Department at Kensington.

The general list of the staff, as shown in the College Calendar, embracing all these various departments, and inclusive of the Masters at the School, gives a total of some 160 names.

With regard to the results and character of the work done: the Theological Faculty appears to be strong, and to be doing good work of a valuable kind for a number of deserving students.

On the Arts side it cannot be said that at present any amount of work of a high standard is being done in the College. In Arts proper we found practically no Honour work being done. The students were mainly the Queen's scholars, who come with little or no grounding in languages, and whose time is very limited. In Greek and Latin the classes were very small, and the work of an elementary character. In English

the numbers were larger and the standard higher, and the same remarks applies to History. In German the numbers were again very small. In French the numbers were somewhat larger but the work was mainly elementary. The Professors evidently do their best to make the teaching as advanced as possible under the circumstances.

The lectures on Mathematics and Physics were good of their kind and well organized. The same may be said of those on Chemistry, Physiology, and other branches of natural science; also the lectures on theory were supplemented by courses of practical instruction in the laboratories, which were well arranged, and on which the teachers bestow a great deal of pains.

Most of the work then, both in Arts and Science, is of an elementary kind. In saying this we do not at all mean to disparage good elementary work, which is the only sound foundation for advanced work; but, as a fact, the Training College students and the Engineering students together form the greater part of the classes in Mathematics; and the former do not go beyond the elementary stage, nor yet the latter, in their preliminary training. Engineering students also form a large part of the Physical and Geological classes, and Medical students form the bulk of the Chemical, Physiological, and Biological classes, and do not seek advanced instruction in these subjects, so far as it is not of a specially professional or technical character.

Altogether it is very difficult to form an estimate of the results of the work in Arts and Science done at King's College. The lectures profess to be suitable for students preparing for the examinations of the University of London, but the authorities complain that these examinations are not suitable for their students, and it is evident that the College does not specially lay itself out to prepare its students for them, or much encourage its students to present themselves at them. The office of the College could not furnish us with lists showing the number of students of the College who had passed such examinations in recent years. The Calendar of the University gives lists of Honours only. From this it appears that in the five years 1891, to 1896 inclusive, there came from the College eight graduates with Honours in Science, and four with Honours in Arts. We may, perhaps, assume the number of graduates without honours to have been at least as large.

The distinctions obtained by old pupils of the College at Oxford and Cambridge, which once were very frequent, seem in the same way to be dying out, though former pupils of the School have won a fair number of distinctions at Oxford and Cambridge during the past year. The College further holds its own examinations, which, so far as we can judge from the questions proposed, are satisfactory, though the questions are not in general of a very advanced type. There is no reason to suppose that advanced students are neglected. On the contrary, they get individual teaching, and special Laboratory instruction. In the Chemical Laboratory there were at the time of our visit four students preparing to take the B.Sc. degree, and making Chemistry their principal subject. Again, the whole programme of lectures at the College is a very extensive one, and a good many of these lectures fall outside the ordinary course of instruction in Arts and Science, and are attended chiefly by occasional students who do not look forward to graduating. And it should not be forgotten that researches are carried out in most or all the laboratories of the College, and published, and that the laboratories are frequented by men of mature age, who take advantage of them to carry out special investigations.

The College confers the title of Associate in Theology, General Literature, Engineering, and Medicine, and also in connexion with the evening classes. The conditions under which this title is given differ in the different cases; but in the Faculties of Arts and Science a course of three years' study in the College and the production of certificates of proficiency are required. These certificates are given on the results of the College examinations, combined with testimony from the Professors. In the five years 1891 to 1895 only 12 seem to have taken the Associateship in the Faculty of Arts, that is less than three a year. In Engineering a larger number took it. To the latter it serves the purpose of a degree, as it does to students in the Theological Faculty, of whom many take it.

In the Ladies' Department the students are of a higher social standing, and there is more freedom of range and in the treatment of subjects. The lectures, to judge by the specimens we heard, are good, and we have evidence of good work done by the students. Altogether the lady students appeared to us to be more cultivated and capable, and to reach a higher standard than the men students in Arts at the College proper. The difference is, perhaps, most marked in French and German, where the performance of some of the lady students is very creditable.

King's College is very anxious for a teaching University in London, of which it should form a part. The authorities say, and perhaps with justice, that they have little reward or attraction to offer to Arts Students under the present system. The ordinary degrees in Arts of London University, we were told, can be better prepared for by the University Correspondence College.

The Professorial Staff includes—

I. In the Faculty of Theology a Professor or Lecturer, or both, of—
(1.) Dogmatic Theology and Evidence.
(2.) Hebrew and the Exegesis of the Old Testament.
(3.) Exegesis of the New Testament.
(4.) Ecclesiastical History.
(5.) Pastoral and Liturgical Theology.
(6.) Logic and Mental Philosophy.
(7.) Latin.
(8.) Theory and Practice of Vocal Music.
(9.) Laws of Health and Disease in their relation to the Ministerial Office.
There are also two Theological Tutors.

II. In the Faculty of Arts a Professor of, and Lecturers on—
Greek and Latin.
Greek Testament.
Hebrew.
Mathematics.
English.
History (3).
French.
German.
Logic and Mental Philosophy.

Some of these are the same as those which appear in the Faculty of Theology, and there are some others, such as those of Spanish, Italian, and Economic Science, who hold evening classes.

II.—B. Oriental Languages.—There is also a system arranged in common with University College, under the auspices of the Imperial Institute, for the teaching of modern Oriental languages, including teachers at University College of the following:—Sanscrit, Bengali, Hindi, Hindustani, Tamil, Telugu, Punjabi, Pali, Marathi, Gujarati, Arabic, and Persian; and at King's College, of Colloquial Arabic, Chinese, Burmese, Modern Greek, Colloquial Persian, Japanese, Russian, Turkish, Armenian, Swaheli.

III. In the Faculty of Science there are Professors of—

Natural and Experimental Philosophy.
Botany and Vegetable Biology.
Geology, Mineralogy, and Geography.
Chemistry.
Metallurgy.
Physiology.
Mechanical Engineering.
Civil Engineering.
Electrical Engineering.
Architecture and Building.
Drawing, Freehand and Geometrical.

There are also Lecturers, Assistant Lecturers, and Demonstrators of—

Greek and Latin (1).
Mathematics (2).
French (1).
English (3).
Natural and Experimental Philosophy (2).
Chemistry (3).
Botany (1).
Photography (1).
Metallurgy (1).
Architecture and Building (3).
Drawing (1).
Mechanical Engineering (1).
Civil Engineering (3).
Electrical Engineering (1).
Physiology and Animal Biology (2).

In Theology the Professorial and Teaching Staff appears to be thoroughly adequate. The emoluments of the professors and teachers are not large, but there seems to be a good deal of subdivision of work and duties, and perhaps, in view of this, they may be considered sufficient.

In Arts the staff also appears to be adequate, and indeed the same staff could on the literary side probably deal with more pupils, and give lectures and instruction of a higher and more extended character were pupils of greater capacity forthcoming.

There is little or no endowment for Professors, and the emoluments of the Professors in Arts are distinctly small, and in several cases can hardly be pronounced adequate to secure and retain the services of the best men. For instance the emoluments of the Professors of French and German are apparently both below 100*l.* per annum.

In Science the emoluments are somewhat larger, but here again by no means large when compared with those of other Colleges. In the Department of Engineering student-demonstrators assist in giving practical instruction. They receive no stipends, but get a return for their labour in their opportunities of advanced study and research. It should further be noticed that the College has recently adopted a system, by which a proportion of the fees, not exceeding one quarter, is reserved for the expenses of administration of the College, and the remainder in each faculty or department is further charged with the necessary expenditure for the purposes of teaching, including the payment of assistant teachers engaged at fixed salaries, and the balance remaining, after deduction of these departmental expenses, is then assigned to the various chairs in proportions determined either by the Boards of the Faculties and Departments themselves, or, if the Boards so desire, by the Council. The effect of this will be in most cases still further to reduce the stipends of the Professors, and in some cases to do so by very large amounts, leaving emoluments which, unless they can be supplemented from some other source, must be pronounced totally inadequate, and which will, we believe, be found insufficient to retain a working staff of teachers of anything like the past, or indeed any good academic standard.

Department for Ladies.

In the Department for Ladies the lectures and instruction are partly provided by the Professorial staff of the College, partly by additional teachers.

There is a resident Vice-Principal in this Department, a lady, who herself lectures in English Literature.

Buildings.

The situation of the College is in some respects advantageous. It is accessible, healthy, and pleasant from its proximity to the embankment and the river. At the same time the site is very confined, and it is difficult to find room for necessary extensions. As a consequence the Departments of Natural Science have encroached on the Lecture Rooms of Theology and Arts, and again a portion of the rooms for resident students has had to be given up to make room for extensions of certain Scientific Departments. It may be noted that the College does not possess the freehold of much of the present site, and cannot therefore borrow money upon it, a drawback which has been found to be considerable.

The Lecture Rooms on the Arts side are good and well arranged, and the chief Theological Lecture Room in particular is a fine room. Owing to the want of space the buildings are what is called very "up and down," extensions having to be made by erecting superstructures, often at a considerable and inconvenient height, or by addition in the basement at an inconvenient depth. Could the School be removed from its present position into the suburbs or country, a step for which the Council on other grounds seems anxious, a great deal of valuable space would be gained for the College.

It is to the credit of the College that, notwithstanding this difficulty, and the inconvenience to many departments and to the general working, it has made successful efforts to keep abreast of the modern growth of physical and natural science. Indeed, in not a few cases, it has anticipated other institutions in providing practical instruction in some branches of science which have received in recent years rapid and unforeseen development.

The new Chemical Laboratory for elementary students is excellent, but the advanced laboratories are hardly adequate to what is required, and indeed the College is anxious to extend them as soon as possible. The Botanical Laboratory is very small, though, as far as it goes, well suited to the purposes for which it is required. The present class is very small.

The William Siemens Laboratory for electrical engineering is quite new and excellent in its way.

The premises of the Ladies' Department in Kensington Square seem sufficient for their purpose, and the situation has been well chosen. They include some excellent lecture rooms, and sufficiently good laboratories for Chemistry and Physiology.

Museums.

As regards Museums the College is, speaking generally, exceptionally well off. The collection of physical apparatus connected with the Wheatstone Laboratory is of considerable historical interest. The Geological and Biological Collections are very fair, and quite adequate to the needs of teaching in these subjects.

Library.

The general Library is very fair as regards both the collection of books and the rooms in which they are housed, though the collection of books is by no means up to date, and the sum expended on the Library is scarcely sufficient to maintain a complete learned or scientific library according to modern standards.

Fees.

The fees for ordinary students seem to be decidedly high. Those for the Arts course are apparently slightly higher than at University College. The fees for the Science course are decidedly higher. To both must be added the entrance fee of 4*l.* 15*s.* 6*d.*

It should be remembered that the Queen's Scholars, who form the bulk of the students in Arts, do not pay these fees, but, in consideration of an allowance made to the College by the Education Department, are admitted and receive tuition free.

The charges for residence are very moderate.

It should be noted that a very large reduction is made to pupils who pass from the College School to the College. In our opinion this is a policy which seems to require justification.

The fees for the Ladies' Department seem, on the other hand, to be very moderate, mostly one guinea a term for a course of lectures given once a week.

Duration of Course.

The regular course of instruction in each of the Faculties of Arts and Science, extends over three academic years, the length of the annual session being 33 weeks.

Students.

All new students are examined as to their fitness to enter the classes, and those who matriculate have to bring testimonials as to character, and to subscribe a declaration that they will conform to the Regulations* of the College. Non-matriculated students are admitted to every class on payment of the fee, but are not obliged to subscribe any declaration or to take any prescribed course of study. The lady students are not matriculated, and it is the policy of the College to leave them entirely free as to choice and combination of subjects of study, and to make no effort to press them to prepare for any particular examination. It may be noted, however, that a few have recently begun to avail themselves of the Oxford examinations for women. In 1894–5 there were in Arts 62 matriculated and 15 non-matriculated students, in Natural Science 15 matriculated and 55 non-matriculated students, and in the Engineering division of Science 91 matriculated and 46 non-matriculated students; and in the Ladies' Department there were in all 358 students. In 1895–6 there were in Arts and Science 284 day students, and 305 evening students, and 315 lady students.

The Theological students are, as might be expected, persons of some age. They are mostly drawn from London and the neighbourhood. We are told that the result of the examination recently adopted by the bishops had been to reduce the number attending evening classes, and to increase those of the day classes. This would seem to be a desirable change.

In Arts the quality of the students does not appear to be generally as high as it was formerly. At one time students used to come a good deal to King's College on the Arts side, between the period of their leaving school and proceeding to Oxford and Cambridge. Now the habit is to stay to a later age at school and go direct to the older Universities. It may be noted too that schools now-a-days make far more

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* These Regulations require matriculated students to attend Chapel and certain Divinity Lectures, but a byelaw adopted in the present year (1896) exempts those who have conscientious objections thereto from such attendance.

provision for the teaching of Mathematics and Natural Science than was formerly the case.

As in the case of the other London Colleges, it can hardly be said that there is any particular district served by the College.

It will be observed that the scientific departments are largely frequented, as is the case in several of the other colleges, by engineering students, who come to get that training in the principles of Physical Science which is now rightly deemed an essential preliminary to the study of their profession in the office or workshops of a practising engineer.

T. H. W.
G. D. L.

(3.) BEDFORD COLLEGE, LONDON.

Bedford College was originally founded in 1849, as a college for adult women students. In its earlier years, owing to the inadequate provision then existing for the preliminary preparation of women students, it was found desirable to maintain a school in connexion with the College. This was carried on successfully for 15 years, when, owing to the general improvement of girls' schools, it was found to be no longer required, and Bedford College reverted to its original idea of a college for the higher education of women.

It is the only exclusively women's college receiving a grant from Government. In connexion with this grant two facts are noticeable :—(1.) The Government grant of 700*l.* per annum was followed by a grant from the Technical Education Board of the London County Council of 500*l.* per annum. (2.) The College was enabled at once to lower its fees and to raise the stipends of its teachers. These steps were followed by an immediate and large increase in the number of the students. About the same time, however, a new Principal was appointed, and to her energy and efficiency some of the increased prosperity of the College may be due.

During the years of its existence the College has enjoyed in various ways the services of not a few eminent men and women, and has educated a number of successful and distinguished pupils. With regard to the work now being done there, judged by University standards, a good deal of it is of an educational and preparatory rather than of an advanced and learned character, but it is distinctly good of its kind, liberal and scientific in spirit and treatment, and of academic type. The actual standard may be estimated by the fact that most of the students aim at passing the examinations for the Degrees of the London University. The number of graduations at this University is very satisfactory and creditable, as is also the list of distinctions. Thus, of twelve students who presented themselves for examination for the B.A. degree in October 1895, five passed in honours, and one in the first and four in the second division. A certain number of students have also from time to time passed to the older Universities, and won good College and University honours there.

The College is well provided with Scholarships and Fellowships, which stimulate and encourage higher work. We have inspected the examination papers for some of these, which seem well considered and testing, and show a good standard. Some students also continue after graduation, and work for the M.A. degree, or pursue advanced study of a " post-graduate " kind.

In addition to the regular courses preparatory to the degrees in Science, the College provides a special course of instruction in Hygiene for women, embracing general Hygiene, and also Physiology and Bacteriology, Chemistry and Physics and Meteorology. There is also a special Training Department, and an Art School.

Staff.

The teaching staff includes lecturers in Latin, Greek, Mathematics, English, French, German, Ancient History, Modern History, Mental and Moral Science, Animal Biology, Vegetable Biology, Chemistry, Geography and Geology, Hygiene, Physics, Physiology and Bacteriology; and Assistants in English (2), Greek (1), Latin (1), Mathematics and Physics (1), and Physiology and Bacteriology (1). There is also a Professor of Art who has charge of the Art Department, and the Training Department has teachers of its own. Many of these teachers have duties elsewhere, an arrangement by which the College is able to secure the services of not a few persons of reputation and experience. At the same time a certain number, including the teachers in some of the most important studies, give their whole time to the College. Great care is evidently taken by the College to select, if possible, persons who shall not only be good representatives of

their subjects, but also excel as teachers. Altogether the staff may be pronounced in general terms a very good one, and thoroughly adequate to the present purposes and needs of the College, though there is perhaps some inconvenience to both teachers and pupils when the former have to come from a considerable distance, and can only attend on certain days and at certain hours.

The emoluments of the teachers are somewhat low, more particularly in the case of those who give their whole time to the College, in no instance much exceeding 200*l.* per annum, and in several falling below 100*l.*

Buildings.

The site of the College is a convenient one as regards accessibility, and the proximity of the Regent's Park and Botanical Gardens, to which the students have admission, adds not a little to its amenity. At the same time it is, as regards the buildings of the College, rather shut in and also noisy. The College has recently acquired some additional adjoining premises, but even when these are occupied the room for extension must remain limited. So far as they go, the rooms and premises are fairly commodious. Some of the lecture and class rooms are good, others are wanting in light and ventilation. The accommodation for dining, and for the Principal's residence, is hardly sufficient. The arrangements for the residence of students, apart from the dining room, though small, are very fair. The rooms vary a good deal in size and convenience. There are not enough lecture rooms. The Chemical and Physical Laboratories, which are new, are good and sufficient for their purpose. The College is anxious to add some new laboratories for Botany and Geology, additional lecture rooms, additional rooms for resident students, and a gymnasium, and to extend the present dining hall.

There is also much need of increased and more comfortable arrangements in the way of a room, or rooms, for the professors who come in for a certain number of hours in the day.

Museum.

There is no Museum, but only certain working collections of specimens for illustrations at lectures.

Library.

The Library appeared both crowded and noisy. For this the College is anxious to make larger and better provision, which would seem to be much needed. The Library would further seem to be in want of pecuniary assistance. There is no special fund for maintaining it, and the College is apparently able to spend somewhat less than 50*l.* per annum on books, maps, models, &c., and to make occasional purchases.

Fees.

The fees are at present decidedly high. They are on an average as follows:—Arts about 30 guineas, Science 44 guineas, per annum.

The Treasury grant of March 1894 enabled the College at once to lower its fees by 25 per cent., while at the same time raising the stipends of the professors. The increase in the number of students seems to show that this step was well advised, but the College is not anxious to lower the fees any further.

It was noted above that the Treasury grant was followed by a grant from the Technical Education Board of the London County Council of 500*l.* for the further equipment of laboratories and development of practical work in Science. It was with this grant that the present Laboratories of Chemistry and Physics were fitted up.

Duration of Course.

The usual course extends over three years, the academic session reckoning three terms, which make about 31 weeks for the year.

Students.

The students in Arts and Science in the year 1895–96 numbered about 176, of whom 68 were reading for a degree. Some, however, at the time of our visit about 34 in

number were doing so, read for purposes of general culture. There are also about 15 Fine Art students. Unlike University College and King's College, Bedford College appears to value the London University degrees, even as at present arranged, very highly. The authorities would, however, prefer to have a teaching University with an arrangement of joint professors, and some voice in the control of the examinations.

There are about 30 resident students, and the number could readily be increased if the College could find more room and accommodation. These come from all parts of the country, and also from abroad. There are students from Germany, Russia, America, and in particular there are a large number from Holland. The non-resident students come from all parts of London and also from the suburbs, more especially, perhaps, as is natural considering the situation of the College, from the Harrow and Ealing region. Most have been educated at high schools, though some few have been educated at home. There are too, of course, the County Council scholars. There are a few also who began at elementary schools. These look forward to obtaining posts as teachers at secondary schools.

Most of the students appear to be of about the same age, and we were told they were so; the average age is about 20, though there are a few as young as 16; on the other hand the Hygiene students are somewhat older. These last are mostly fitting themselves to become sanitary inspectors. We were told that the College was not believed to have suffered so far from the competition of the Women's Colleges at Oxford and Cambridge or the Royal Holloway College.

Bedford College is the only exclusively Women's College we have visited. There seemed to be, perhaps, a certain advantage in a greater freedom and ease of the students among themselves resulting from their isolation, but we are not of opinion that there was much, if any, advantage discernible as regards teaching. The resident students enjoy some of the advantages of collegiate and corporate life.

The College makes occasional, but very occasional, use of the lectures and teaching provided at University College, Gower Street.

T. H. W.
G. D. L.

(4.) THE OWENS COLLEGE, MANCHESTER.

The Owens College, Manchester, is the oldest of the provincial Colleges, having had a history of nearly half a century, and it is certainly the strongest. Its excellence is already attested by the distinction and achievements of its *alumni*, as well as by the published works and recognized position of its Professors both in the past and in the present. It is hardly necessary to say that, speaking generally, it is a well-manned and well-equipped institution, doing good work in many branches of knowledge.

It appears to us to be pervaded by an energetic and active spirit of interest in the concerns alike of learning and of education, and also to have established itself so as to command the respect and support of the community in whose midst it is placed, and more especially of a number of persons resident in the neighbourhood, who are men at once of business and culture.

A Technical School has been recently established under municipal auspices which trenches, to some extent perhaps unduly, upon the province of the College. Efforts, however, have been, and are being made on both sides, to bring about a harmonious relation between the interests of the two bodies, and there is good hope that this may be done. On the other hand, we were specially glad to find that a certain hostility which once existed between the College and some of the schools of the neighbourhood, notably the most important and well reputed, the Grammar School of Manchester, has entirely passed away, and that its relations with this particular institution are now thoroughly friendly.

On the Arts side the character of the work done is undoubtedly of University type and, indeed, comparable to that found in the old universities. This applies to the instruction in Classics, Mathematics, Philosophy, English History, and Political Science, in which last, perhaps, the College has been, and is, particularly strong.

In Classics, pure Mathematics, and Philosophy the number of advanced students is, as might be expected, small; and the standard of capacity varies a good deal from time to time, but students of good ability are not wanting, and the importance of such instruction must not be estimated only by the numbers who can avail themselves of it.

The English language, alike on its literary and linguistic side, has been and is excellently represented. The contributions of the Principal and Professors to the literature of English Studies are too well known to need notice.

In the treatment of the Modern languages efforts are made to encourage literary, scientific, and philological, and not merely linguistic and utilitarian, study. It is hoped that hereafter the institution of University examinations for degrees with Honours in modern languages may give yet further stimulus and elevation to these studies.

The teaching and arrangements in the Faculty of Law call for a word of notice. As is natural in a great commercial centre like Manchester, the lectures of the Professors are made use of by a number of young men engaged in preparing themselves for the practical work of a solicitor's office. It must be remembered, however, that attempts have been made by those who direct the education of solicitors to give it a higher and more liberal character. Cooperating with this effort, the Professors of the Owens College endeavour to keep up a high standard and infuse a liberal spirit into their practical instruction, and a lecture which we heard being delivered to a number of articled clerks, was certainly one which could be called, in the best sense, educational. A certain amount of higher work is also done by them; students are prepared for the Bar, and a small number of legal degrees are worked for and obtained.

With regard to the work done in Science, the departments of Physical Science are in some respects the most important in the College. The courses of instruction have been very carefully organized, and are excellent both on the theoretical and the experimental sides. Chemistry attracts the largest number of students, and of these a fair proportion read for honours. A good number remain after graduating, for higher work in the laboratory, or to pursue original investigations.

Much pains is taken with the training in Experimental Physics, and there is an advanced class, though not a large one, in Mathematical Physics. In the Engineering Department, the aim is to give the students a thorough training in those sciences which bear on the work of an engineer, training of a kind which they would never get in the workshop, and such as is well calculated to develope their mental faculties.

In the Biological Sciences, and in Physiology, Medical students form by far the greater part of the classes, but there are small classes of students, preparing to graduate in science, who do advanced work.

In all departments of natural science, including that of Geology, laboratory work is very carefully attended to.

The quality of the work done may to some extent be tested by the graduations, and by the results of the University examinations in the Victoria University, in which the Owens College certainly holds its own. These examinations are conducted partly by internal, partly by external examiners; the papers set at them, it is hardly necessary to say, are well considered and testing.

There are also a number of scholarships and prizes, the papers for which offer a further test, while the internal class examinations give some indication of the ordinary work within the College itself. All these facts, considered together, point to an excellent standard of aim, and, it may safely be presumed, of average achievement, while the steady increase in the number of degrees obtained by students of the College should be noted as being satisfactory.

A certain number of students also still present themselves with success for the London University examinations, but, as was probable, since the institution of the Victoria University this number has diminished and is diminishing.

Occasionally students, whether in Classics or Mathematics or Physical Science, have passed to the older Universities, where they have won high distinction and reward. In like manner, some of the Professors, Lecturers, and Demonstrators have been preferred to good posts at the English or Scotch Universities. Beside this the College has a very good record of Professorships, Lectureships, and distinctions, obtained elsewhere by its former pupils. We were furnished too with a long and very interesting list of the Associates of the College who have achieved success in various branches of literature. Not less satisfactory evidence of the good work done in the College is afforded by the investigations which are carried on in its Laboratories and published from time to time in volumes of no mean bulk.

Beside the work done by the College within its own walls it should be noted that it provides additional separate instruction for women students in their earlier stages outside the College, and also maintains, in connection with the Museum, a system of Lectures of a popular character, which are largely attended by working men. These have led, in some cases, to the establishment of societies among working men for the study of Natural History.

There is further the system of Evening Lectures, which are attended by schoolmasters and by persons occupied during the day, and preparing for the examinations of the University of London.

Staff.

The Professorial Staff comprises, on the Arts side, Professors of Greek and Comparative Philology, Latin, Mathematics, English Language, French Language and Literature, German Language and Literature, History (2), Logic and Mental and Moral Philosophy; Law (2); together with Lecturers in English Literature, Greek and Latin* (2), Mathematics (3), Hebrew and Arabic, History (2), Geography, Political Economy; Law, Jurisprudence and Roman Law, and a Reader in Common Law.

And on the Science side, Professors of Physics (2), Chemistry (2), Zoology, Botany, Geology and Palæontology, and Civil and Mechanical Engineering. The Professor of Physiology is really connected with the Medical School, although his class includes some students who are not medical.

There are also Lecturers or Demonstrators in Physics (3), Chemistry (7), Zoology (2), Botany (1), Geology (1), Civil and Mechanical Engineering (4), Mineralogy (1), Music (1), and in Physiology (2).

There is also a Lectureship on the Greek Testament, at present held by the Professor of Latin, and one on Ecclesiastical History, at present held by one of the Professors of History; and in connexion with the evening classes there are Lecturers in Spanish and in Italian.

The emoluments, which depend partly on fixed stipends, partly, in the case of Professors, on fees, are very variable in amount. The emoluments of the Professors and chief Lecturers appear to us to be, generally speaking, very fairly adequate, and are certainly enough to attract very excellent holders of the several chairs. The remuneration of the Assistant Lecturers is small, but the positions must be regarded as in themselves desirable for young men as giving opportunities of study and advancement.

Buildings.

Speaking generally the buildings, which are handsome, spacious, and commodious, seem amply sufficient for the present needs. The lecture rooms and class rooms, in particular, are as a rule excellent, large, airy, and well lighted, and those parts which are of newer construction are especially well adapted to their purpose, and to prospective as well as present requirements.

Laboratories and Museums.

At Owens the laboratories are in general excellent. The Chemical laboratories, previously spacious and well planned, have recently been enlarged by the addition of the Schorlemmer Laboratory, fitted with the best modern appliances for research in Organic Chemistry.

The Physiological Laboratory is a very fine one, and both it and the Whitworth Engineering Laboratory are quite new and well equipped.

The Geological and Biological laboratories, built for the purposes for which they are used, are very suitable and quite sufficient for the senior classes and for research, though the elementary classes in some cases bid fair to outgrow them.

A society in Manchester, independent of the College, maintains a Botanic Garden, from which a supply of material is drawn, and to which the senior students are taken for purposes of study.

The Manchester Museum (of Natural History) is now housed within the College precincts, and is managed by the College Council for the benefit of the public and the College alike. The collections it contains are very considerable, and have been arranged under the scientific supervision of the Professors of Natural History. Attached is a separate library of books on Natural History. Students of the College can obtain access to the specimens, and have the books on loan, for purposes of study.

In return for the advantage, undoubtedly a great one, of having the use of the Museum, the College has to pay a considerable part of the expense of its maintenance,

* Assistant Lecturers have just been appointed in Latin, and in Greek and Philosophy.

and the professors of the College give short courses of popular lectures, open to the public, on subjects illustrated in the Museum. Some of these lectures are very well attended, and have been the means of awakening a real interest in Natural History amongst working men in Manchester.

Library.

The Library accommodation is at present insufficient; the Reading Room is limited, and the books belonging to the Library are scattered in a variety of places. The handsome new Library, however, which is being erected at this moment by the munificence of Mr. Christie, will remedy both these defects. The amount annually spent on the Library would seem to be enough for ordinary working and educational purposes though, perhaps, hardly enough to maintain a learned and scientific library of the highest type.

Fees.

The fees appear to be nearly equivalent to those at Liverpool and Leeds, and at Birmingham, somewhat lower than those at Bristol, and decidedly lower than those in London, but they are a little higher than those of the Sheffield and Nottingham Colleges. We were told, however, that the College had carefully considered them, and after full deliberation had come to the conclusion that they could not be raised. The spirit of the community in the midst of which the College is situated is said to be somewhat parsimonious in matters of education. Many of the students are decidedly poor. Many come from a distance, and to their fees must be added the cost of locomotion. We were informed that an average contract for a student for railway travelling for the year would amount to as much as £7. On the other hand, in view of the financial position of the College, it would not seem possible at present to lower the fees, even if such a course were desirable.

There is an admission fee for every student of £1 1*s*. 0*d*. and a library fee of 10*s*. There are no degree fees payable to the College as apart from Victoria University.

The Owens College does not differ materially from the other Colleges in its definition of subjects of University rank, or the standard at which it aims, or the distinction of different kinds of students, with regard to which points the remarks made in our general introduction hold good.

Duration of Course.

The course of instruction as a rule extends over three academic years, the session reckoning for day students 40, and for evening students 22 weeks inclusive of time devoted to examinations.

Students.

In Arts, Science and Law there were, at the time of our visit, 654 day students, 551 being men, including 38 students from the Training College, and 103 women, including 18 from the Training College. Of these 119 were reading for the preliminary examination, 117 for degrees in Arts, 228 for degrees in Science, and 11 for degrees in Law. There were also 339 evening students.

The students are mostly matriculated students of the Victoria University, it being impossible without matriculation formally to enter on a course of study for a degree.*

Our attention was called to the fact that regular students are encouraged by the authorities. No terminal admissions are now allowed in the case of students of ordinary age and attainment. In earlier days students chose their own courses, or combination of courses, at their own discretion. Now almost all take regular courses prescribed for them.

At the same time "Post-graduate" study and research by advanced students are encouraged, and there are a few occasional students working at special points.

There are two endowed fellowships on the Arts side, each of the value of 150*l*. a year for the encouragement of post-graduate study, and honorary research fellowships, of which the holders are required to work in the College laboratories, and have the use of the ordinary laboratory appliances free of charge.

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* Matriculation consists in placing the name on the University Register, and does not involve any examination or fee.

Women students are not allowed to join the general lectures and classes until they have passed the preliminary examination. Previously to their passing this they are provided with special lectures and classes of their own. They are also sometimes taken in separate classes at a later stage, if the numbers are large, as is the case with some of the French classes.

The bulk of the students reside at their own homes either in Manchester or the neighbourhood, but about 150 reside in one or other of some collegiate institutions, for the purpose of attending the College.

Thus there are two halls, the Hulme, or Church of England, Hall, and the Dalton Hall, instituted originally by the Society of Friends, which accommodate 30 and 40 students respectively, and endeavour to give them some of the supervision, assistance and advantages of College life. Arrangements are also made for the boarding of a certain number of women students; and several Nonconformist Colleges in Manchester now send students to attend lectures in Hebrew, Greek and other subjects at the Owens College.

As regards the district supplying students and served by the College, it comprises Manchester itself, then the thickly-populated region sometimes called the larger Manchester, and also the area comprised within a radius of some 20 miles. Many students come from homes still further afield, some travelling in daily from a distance of 40 miles.

With regard to the Evening Classes, we were informed that the policy of the College was gradually to reduce and discontinue these, so far as they are mainly concerned with work not of the most advanced kind nor of University character, and as the needs which they were devised to meet are supplied by other agencies. These remarks do not apply to the Monday Popular Lectures given in the College, which the Council hope to organise more completely as time goes on. To the deliberate pursuit of this policy must be attributed the diminished entry for the Evening Classes in this present term, namely, Michaelmas term 1896. It is also the aim of the College to endeavour to raise the standard and quality of the students rather then to encourage numbers. Making allowance for these two considerations, the numbers of the students have continued steadily to advance, and at the close of the last session stood higher than ever before.

The institution of the sister College at Liverpool has not, we were told, diminished the numbers at the Owens College, but some diminution has taken place through the attraction of the Welsh Colleges, which have drawn off a certain number of Welsh students who used to come to Owens.

The fact that in the last six years the number of regular students reading for degrees in Arts and Science, and Law, has nearly doubled, and that the number of actual graduations has increased in similar proportion, affords the best proof that the College is doing good University work, and work appreciated by the district and community which it serves.

T. H. W.
G. D. L.

(5.) UNIVERSITY COLLEGE, LIVERPOOL.

The history of the foundation, rise and growth of this College is very remarkable, in the splendid record which it affords of wise and sympathetic encouragement of science and learning by civic munificence.

Of the three Colleges which are at present united in the system of the Victoria University, the Liverpool College is the youngest. It was not founded until 1878, and the first buildings were only completed in 1882. The very fact, however, of its later origin gave it the advantage of starting with the experience behind it of other University Colleges, more especially of the Owens College at Manchester. Beginning with this aid, deliberately planned and thought out by able and sagacious men, and backed by no small amount of the wealth and public spirit of one of the most prosperous cities of the Empire, Liverpool College has grown very rapidly, and stands to-day in a position of much strength. It has fine buildings, handsomely and consistently carried out, and fitted with modern appliances and conveniences. It has been able to put itself from the first into a good relation with the interests of Law, Medicine, and Fine Art. One note of its modern character is that the women students at Liverpool enjoy more than anywhere else a position of complete and equal recognition

with the men, which is the more happy because it has never had to be fought or struggled for, but has existed from the first. The College further seems pervaded with the enthusiasm of youth, and to be full of confidence, energy, and aspiration. It has been able to attract the services of an excellent staff, and it follows that it is doing all round good and vigorous work.

The Classical languages, English, French, and German, are represented and taught by men of first rate ability, who unite in a high degree learning and scientific scholarship with the sympathy and stimulus necessary for the teacher; and the same may be said of Philosophy, History and Political Science. Mathematics and the Physical Sciences are no less worthily represented either in regard to the ability of the teachers or the character of their instruction. Indeed the combination of the ideals of learning and research with those of education and public utility in Liverpool College is most remarkable, and was strikingly shown in several of the lectures which we heard. These were, to speak generally, of a thoroughly good University type, and we had evidence in several cases that the students themselves had reached a good standard of attainment. In French and German especially, which so often degenerate into being merely grammatically and linguistically treated, the teaching at Liverpool is of the highest order, while the command of the language acquired by a number of lady students in Italian is very remarkable. It is hoped that hereafter the institution of University Examinations for degrees with honours in Modern Languages, now under consideration, may give yet further stimulus to these studies.

The arrangements for the Law lectures are very much the same as at Manchester, and the classes of students attending them are analogous. As at Manchester, the lectures are given, not at the College but, in the city, and here too the students have access to a good legal library. The relation of practical to academic and higher study is also very much the same in both places.

Although Art and Architecture do not come properly within our purview, we could not fail to be struck with the intimate and promising connexion which exists between the University College and the Schools of these subjects recently established, a connexion which can hardly fail to be of advantage to both.

Special attention is also paid by the College to the science and theory of Education.

The standards arrived at in Liverpool College, as in the Owens and Yorkshire Colleges, may be judged partly by the common examinations of the Victoria University, partly by the College Examination papers which are of a sufficiently testing character.

The proportion of students reading for honours in Arts and Science is unusually high, and that the standard of attainment is not less so, is abundantly shown by the class lists of the Victoria University. It may be noted in particular, that in the year 1894–5, the number of Liverpool College students who obtained a First Class was greater than that of those who obtained a Second, and also that the number of women students obtaining University certificates of proficiency was larger than in any previous session. Here again, as at the Owens College, for evidence on this head we may further point to students, both male and female, who have passed from the Liverpool College to the old Universities and won there good honours, as well as to students who have been appointed to important posts in England or Scotland, or have achieved distinction in other ways. The Annual Report of the Council to the Court of Governors for 1895, in which these and other facts are set forth in detail, enforces in a most satisfactory way the conclusions at which we have arrived on other grounds, as to the efficiency of the College.

Staff.

The Professorial staff comprises Professors of Greek, Latin, Teutonic Languages, Mathematics, Modern Literature, History, Philosophy, Economic Science, Law, Physics, Chemistry, Natural History, Botany, Physiology, and also of Engineering, and of Architecture; and Lecturers in English Language, French, Italian, the Art of Education, Physiography, Organic Chemistry, and Electro-technics. There are also Assistant Lecturers in Classics, Mathematics, Physics (1), Engineering (2), Chemistry (2), Zoology, Botany, and Physiology. Of the high character of the staff, including as it does many men of much eminence and academic distinction, and some of specially wide reputation, there can be no doubt. It is worth noting, perhaps, that both last year, 1895, and again this year, 1896, Professors at the Liverpool College have been elected to positions on the Professorial staff at Oxford.

With regard to the emoluments of the Professors, the College adopts the principle of a uniform fixed stipend of 375*l.* per annum, to which are added two-thirds of the

fees. The inequality of the amount of the latter produces a corresponding variation in the total receipts. In general terms the remuneration may be called very fair, but not more than is sufficient. It is lower on the Arts than on the Science side. The remuneration of the Lecturers seems fairly adequate.

To make the Staff complete some new Chairs require to be added. There is no Chair of Geology, and the province of the Professor of Philosophy, who is called on to instruct in Morals, Metaphysics, Logic, and Psychology, is unduly large, and demands assistance or subdivision.

Buildings.

As we said above, the main buildings of the Liverpool College have for the most part the advantage of recent construction, and are in many ways particularly good. The equality of the men and women students is reflected in the equal provision of common and general rooms for each sex; while the Professors are better supplied than in many places with private rooms. The lecture rooms are generally sufficient, being large, airy and well lighted. At the same time some departments are still lodged in buildings not intended for their present use, and not specially adapted for it. Through the energy, however, of the staff, the teaching given in these subjects does not materially suffer, and the process of reconstruction and addition, which is rapidly going on bids fair soon to remedy any defects not already removed. The Engineering Laboratories are new, excellent, and well equipped; a large addition has just been made to the Chemical Laboratories, which will render them very complete; and a new Physiological Laboratory is in course of construction. We may remark here that we were told that it was found much easier to obtain money for a new building than for the endowment or maintenance of laboratories, or other institutions, when erected.

Museum.

With regard to Museums, there are several good departmental collections both of specimens and apparatus. There is no general Museum, but so long as these departmental collections can be fully maintained, the want of this cannot be regarded as any serious defect in the educational equipment of the College.

Library.

The Library in particular, aided by many handsome donations, but especially by the munificence of Mr. Henry Tate, is already a very good one. The rooms in which it is contained are fine, and well adapted alike for reference and reading, while as regards the books themselves, the collection has been begun on scholarly lines, and is already strong, especially on the literary and artistic side, in the possession of many great standard works and series, and whether from the point of view of the student or the general reader, must be pronounced very serviceable. This result is, we believe, largely due to the judgment of the Principal, but not less to the happy choice made by the College, of its Librarian.

At the same time the actual endowment of the Library is small, and the annual amount which the College is able to devote to it is hardly sufficient for its proper maintenance, and is certainly not worthy of such beginnings.

Fees.

The maximum fees for a full first year course amount for a first year to 24*l.*, for an intermediate to 20*l.*, and for a third year course range from 16*l.* to 20*l.*; Training College students are taken at 15*l.* per annum all through, and the College admits as College students at 5*l.* per annum a certain number of persons who are proved to be in need of assistance, and are over scholarship age.

The ordinary fees, though they are slightly higher, were intended to range with those of the Owens College. It must be remembered that, as at Manchester, many of the students have to meet in addition a considerable expense for travelling to and from their homes.

While the Council do not think it advisable to lower the fees, because this would tend, in their opinion, to foster an intellectual proletariate, and also because of the financial position of the College, they are clearly of opinion that they should not be raised. The lowness of the voluntary payments made by the students to their own

clubs affords some evidence that higher fees would be undesirable, and we were told that only about ten per cent. of the students could be regarded as wealthy.

Day students are required to pay an annual Registration Fee of 1*l.* 15*s.* 0*d.* This includes all charges for registration and for the use of the Library, reading, common rooms and refectory.

Duration of Course.

In Arts, Science, and Law three years of residence, that is of attendance on prescribed courses of study, are required; the academic year consisting for day students of three terms of an average duration of somewhat over eleven weeks each, for evening students of three terms of ten weeks each.

Students.

The numbers of the day students show a decided and steady increase during the last five years. Most of these are regular students taking regular courses, but there are a certain number of occasional students, mostly women, who take modern languages. To this class belong many of the students of Italian already alluded to. The students attending the lectures in the theory and art of Education, on Fridays and Saturdays, are also to be considered extra students, being drawn from all the Training Colleges in and about Liverpool.

The evening classes at Liverpool are strong and well attended, and are encouraged by the College.

There is no residence for students excepting the hostel for the training students. A few reside in lodgings, but most with their families or friends.

The College serves generally the large population of Liverpool and the neighbourhood; among the commercial students there are some from France, and also some Greek and Oriental students.

The Welsh Colleges, we were informed, draw off a few students who might be expected to attend the Liverpool College, which however still attracts students from the professional classes in Wales, especially the sons of doctors; but we were told, as we had before been told at Manchester, that the Owens and Liverpool Colleges do not interfere with each other's success, the districts served by the two Colleges respectively being quite distinct.

In conclusion we may perhaps remark, that at Liverpool particularly, we were struck by a feature which we have noted in our general introduction as common in various degrees to many of the University Colleges, namely, the number of clubs and societies, literary, scientific, social, and athletic, existing among the students, and promoted and shared in by the professors. As regards athletics, the Liverpool students are specially fortunate in having a field placed at their disposal by the kindness of a gentleman resident in the neighbourhood.

T. H. W.
G. D. L.

(6.) THE YORKSHIRE COLLEGE, LEEDS.

The Yorkshire College was founded in 1874 and is therefore a little more than twenty years old. It is important, however, to remember that it was at first founded as a College of Science, and that a department of Arts was not added until later. Like the Liverpool University College it is, therefore, a good deal younger than the Owens College, and must be judged to a certain extent, more especially as regards the Arts side, *propter spem* rather than *propter rem.*

Its situation, in the middle of a great manufacturing and industrial area, is very favourable to the development of Technical instruction and Applied science, in which the College is undoubtedly remarkably strong. The population around are only gradually becoming alive to the value of higher and more liberal instruction, and to the advantage of possessing an intellectual centre in their midst. But that the more enlightened minds are already open to these considerations we had good evidence, and the progress of the Arts side of the College, especially during the last few years, is very marked and noticeable.* It may be noted in this connexion that the Principal

* The entries for the present term, Michaelmas 1896, go to confirm this opinion.

and Professors called our attention to the one-sided operation of the restriction by which County Councils are limited in the application of their grants to technical instruction, their scholarships not seldom driving students better fitted for a course in Arts or Science into technical study. The College also has had so far, since its inception, no great benefactions available for general purposes, or the encouragement of liberal education, and a large part of the munificent grants which have been made to it by the Clothworkers and other companies and associations has naturally gone mainly to support the technical side.

It is, therefore, not to be wondered at that the work on the Arts side should be still in a somewhat incipient stage, and mainly educational rather than learned. A good deal of preliminary and lower work of a preparatory character has to be carried on. Thus we found in Latin and Greek little or no Honour work, while in English Literature, French, and History, many of the students have, from a University point of view, hardly passed the elementary or preliminary stage. At the same time the Professors make every endeavour to give to their instruction an elevated and elevating tone, and to maintain academic standards. We found one pupil being prepared with much care for Honours in Philosophy. The work in Old English and German, which subjects are excellently represented, was of an advanced type.

The instruction in Mathematics is very good in quality and quite up to University standards, although the number of students reading higher Mathematics and preparing for University honours is small. A larger number were preparing for the Final Pass Examination for the B.Sc. degree in the Victoria University, an examination of which the mathematical part reaches a standard of considerable difficulty.

The classes in Physics and Chemistry appear to be well trained both in the theory and practice of those sciences.

The quality of the work done generally, if not of a high standard, is thoroughly good and sound. Its character is further attested by the College examination papers, and also by those of the Victoria University. The number of graduations in Arts in the Victoria University is naturally still very small, but there are signs of increase. Those in Science, both at the Victoria and London University, are more numerous, and include a fair proportion of honours.

A few pupils of the College have passed to Oxford or Cambridge, and won College and University distinctions there, and a considerable number have obtained posts in different parts of the country as lecturers and teachers.

Another satisfactory feature of the College is the fact that a fair number of students are found to continue their work after graduation, especially in advanced Physics and Chemistry. Thus in the year 1895–6 seven Bachelors in Science appear as carrying on "Post-graduate" study or reading for the higher degree of Master in Science, and, speaking generally, a good deal of research work is carried on in the laboratories.

We were told too, and an inspection of the attendance books would justify the statement, that, notwithstanding the distances from which many of the students come, their attendance is remarkably good.

There are besides the day classes at the Yorkshire College a number of Evening Classes, which are encouraged by the College. Amongst them are classes on Electricity, and the Physical Laboratory is open one evening a week, and is then frequented by teachers in schools who make good use of it. In Biology the evening classes are replaced by special classes on Saturdays. The evening classes in Chemistry are confined to Theoretical Chemistry.

In alluding to the departments of Technical and Applied Science, which are so strong in the Yorkshire College, it is fair to say that, while we could not consider that they came within our purview, and do not therefore deal with them in any detail, we were impressed with the evident endeavour made by the College, and by the professors of those departments, to render the teaching here too as scientific and educational as possible.

Staff.

The staff of Professors comprises, besides the Principal, who lectures in Greek, a Lecturer in Greek, who also lectures in Philosophy, a lecturer in Latin and Ancient History, a Professor of Modern History, who is also Professor of the English Literature and Language, a Lecturer in French, a Lecturer in the Teutonic Languages and Literature, a Lecturer in Hebrew, and another in Spanish, a Professor of Mathematics with an Assistant Lecturer, a Professor of Physics with two Assistant Lecturers, who are also Demonstrators, a Professor of Chemistry with a Lecturer on

Organic Chemistry, and three Assistant Lecturers and Demonstrators, a Lecturer on Geology, a Professor of Biology, and a Lecturer in Botany, with an Assistant Lecturer and Demonstrator in Zoology, a Professor of Engineering with two Assistant Lecturers who are also Demonstrators, and a Professor of Physiology and a Demonstrator. There are also Professors of Coal Mining, Textile Industry, and Dyeing, and a Lecturer on Art.

It will be seen that on the Arts side the staff is not very numerous, and that several of the Professors are obliged to teach more than one important subject, an arrangement which is very undesirable in the interests both of the Professors and their classes. The emoluments of the Professors or Teachers, which, without this arrangement, would be still lower, can even with it, with some striking exceptions, hardly be pronounced adequate to retain, or reward satisfactorily, the services of the best men. On the Science side the staff is very fairly adequate. It is worthy of note that among former members of the staff are several who have since been appointed to very important professorial and other posts elsewhere and who have risen to much eminence in their respective subjects.

Buildings.

The Buildings, as far as at present erected, are good, well situated, and well arranged. Like the other equipment, they may be pronounced sufficient for present purposes, but a good deal of addition and extension will be required, if the College is hereafter to become more complete, and to take its place as a fully-equipped institution.

On the Arts side the chief Lecture rooms are excellent, being so far as they go generally well lighted and ventilated, bright, cheerful, and very fairly well arranged. The Class rooms are sufficient for present purposes, but they are small and will be found inadequate if there should be any great increase in the number of Arts students. There is a want of private rooms, and also of any general Common Room for the Professors, such as is found in many of the University Colleges.

The Chemical Laboratories are excellent and well arranged, and the Chemical Lecture Room is very large and amply sufficient for larger classes than at present make use of it.

The Physical Laboratories are good, but were planned for research rather than for the accommodation of many students. The instruments are good. It should be noted that in regard to Electricity the resources of the Engineering Laboratory are available for experimental work in addition to the Physical Laboratory. The Biological Laboratories are small and barely sufficient for the present classes. The new Physiological Laboratory in connection with the Medical School is all that could be wished.

A feature of the Buildings of the Yorkshire College is a very handsome and spacious Examination Hall, erected in conjunction with the Library. Such a Hall has, no doubt, it uses, and adds to the amenity and convenience of the buildings, but there is still a heavy debt due for its erection which remains as a burden upon the College, and in our opinion it is open to question whether it would not have been wiser for the College to have postponed its erection (making other arrangements for its examinations), and thereby escaped such a charge upon its funds, at any rate in the present financial position.

Museums.

There is no general Museum. In Biology the Departmental Museum is very limited, and, although the collection it contains is not large, there is not space to display it. Use is made of the Museum of the Literary and Philosophical Society of Leeds for the illustration of Lectures, but this Museum is at a distance from the College, and can hardly compensate for the want of a better provision on the spot. The Geological Collection of Rock Specimens used at present is mainly the private property of the Lecturer.

Library.

The Library, though not large, is a fair-sized room, well lighted and arranged, and fitted with a very ingeniously devised gallery. This again is sufficient for present needs, both as a Library and as a Reading Room, but does not allow a great deal for future additions. There is, however, a good sized store-room in which, by judicious

arrangement, a large number of volumes might be placed. More immediately serious is the need of funds. The Council has been obliged to reduce the annual grant to the Library from 250*l.* to 150*l.* This is a quite inadequate provision, and the need of more funds is the more pressing, as there would appear to be no good learned or even general library in the neighbourhood available except by subscription.

Fees.

The Fees seem to be a little high as compared with those of some other provincial Colleges, though low as compared with those of the London Colleges. It is thought that they could not well be raised. We were told that the average travelling contracts were rather high, the railway companies having reduced their fares only for students under 15 years of age. There would indeed appear to be some considerations rendering it desirable that the fees should be reduced. The Schools of the district are unable to keep their pupils until the age at which they should enter the College, and there is no sufficient supply of Scholarships, more especially for students in Arts and Science as opposed to technical studies. There is for Day students a registration and library fee on admission of 1*l.* 15*s.* 0*d.* There are no degree fees other than those of the Victoria University.

Duration of Course.

The duration of courses is, as elsewhere in the Victoria University, usually three academic years, the length of the session being for Day Students 33 weeks, and for Evening Students either 20 or 30 weeks, according as their classes extend over two or three terms.

Students.

The whole number of students in the departments of Science, Arts, and Technology has remained very constant in the day and in the evening classes taken together; but the day classes have increased by about 11 per cent., and the evening classes have diminished to about the same extent in the last five years.

A noticeable increase has taken place in the number of students on the Arts side, and in the number of those who take degrees. The number of those who enter for the examinations of the Victoria University, especially in Science, rises year by year.

All the students who are reading for the Victoria University examinations are matriculated, and the same is the case with the majority of those reading for the examinations of the London University. It will be noted that there are a few students under 16 years of age. All such students are required to pass an entrance examination in Arithmetic, Algebra, Geometry, and English. Older students are not examined at entrance. The Principal would like to see a uniform minimum age of 16 for admission. The majority are regular students attending courses prescribed by the College.

The College appears to serve, generally speaking, Leeds and the neighbourhood, and all such parts of the West Riding as are not nearer to the Owens College at Manchester or the Firth College at Sheffield. Among places which send in students may be enumerated York, Selby, Doncaster, Barnsley, Huddersfield, Dewsbury, Wakefield, Bradford, Skipton, Knaresborough, Harrogate, and Ilkley.

The special instruction in the Technical schools draws students from Germany, Russia, America North and South, and indeed from all parts of the world. It may be noted that a considerable number of the technical students, and also a number of the students of Chemistry, are sons of the manufacturers of the neighbourhood.

There is a residence under a warden, for male students, known as the Lyddon Hall, which aims at giving to resident students something of collegiate life. Lyddon Hall is, however, a private venture on the part of some persons interested in the College, and the College has no responsibility in connection with it. Also a certain number of students are contributed by a small College connected with the Society of Friends, known as the Flounders' Institute. Further, a certain number of students are accommodated as boarders, or lodgers, under a system of registration arranged by the College Council. Special, and slightly stricter, arrangements are made for the lodging of the Queen's Scholars of the Day Training College.

It is only gradually that the College has succeeded in drawing to it many who regard learning from any point of view except the business one; a good many of the engineering and chemical students still do not seek to obtain degrees, but the number

of those aiming at graduation has been steadily increasing, and their success affords satisfactory proof that the College provides a good education of the University type, while their number is also the best evidence that the College is of value to, and is appreciated by, the community in the midst of which it is situated; while further substantial testimony to this appreciation is to be found in the fact that a sum, in round numbers of 64,000*l.*, has been promised, and 39,000*l.* actually paid in donations to the Extension Fund of 1890 to meet the cost of new buildings for the College and Medical School. A further appeal, made this autumn, has already met with a striking and encouraging response.

T. H. W.
G. D. L.

(7.) MASON COLLEGE, BIRMINGHAM.

Mason College, Birmingham, has just attained its majority, having been founded in 1875, its object being, in the founder's own language, "to give all classes in Birmingham, "in Kidderminster, and in the district generally, the means of carrying on their "scientific studies as completely and thoroughly as they can be prosecuted in the great "science schools of the Continent."

Like the Yorkshire College, then, it was founded originally as a college for scientific instruction, with the addition only of the English, French, and German languages; but the founder, with a wise openness of mind, allowed in his own lifetime considerable modifications and extensions, authorising his trustees to provide instruction in all branches of science, including medicine, in art, in languages and literature, and in all subjects required for degrees in Arts or Science, and he further, with commendable foresight, gave them power every fifteen years to alter or vary the conditions relating to the admission and instruction of the students.

As a consequence, the Mason College, though still comparatively new and only partially developed, has already acquired a very considerable position as a University College, doing good work of various kinds, and providing a fairly complete education in Arts and Science. The scientific side, however, is naturally a good deal stronger than that of Arts.

In Arts proper the instruction given is mainly in languages. In Latin and Greek the number of advanced students is not large, and the standard of their attainment varies very much. The Professor, a man of recognised reputation for learned scholarship, has to deal with all the students in both languages single-handed, and to carry them up from the very elements to an academic level. This, however, he succeeds in doing; and, if advanced scholars are not numerous, he can point to some very remarkable results. Thus it may be noted that a lady student, who was not long ago in his classes, has recently been appointed Reader in Greek in the University of Chicago. A lecture which we heard on Greek and Latin metres should argue a considerable degree of proficiency on the part of the class for whom it was intended. It is satisfactory, too, to notice that the numbers both of the junior and of the senior classes seem to be increasing.

In French the numbers are a good deal larger and appear to have increased of late; and both in French and German the teaching is evidently spirited, vigorous, and effective. The Professors spare no pains to interest and stimulate their classes, and to give variety and scope to their instruction, and, while preparing their pupils carefully for the London Degrees, do not confine themselves to what will "pay in examination."

A lecture, at which we were present, in English was attended by some 60 pupils, some being day students of the College, others pupils of the Training College. The standard proposed in this language is very fairly high, and the instruction given is of an academic kind. The Professor and his assistant endeavour between them to cover the field both of literature and philology. The subject, however, could be far better dealt with had the students more time to give to it, and had they also some philosophic and historical teaching to supplement their literary studies.

In Mathematics and Physical science the lectures, for other than the junior classes, are arranged generally to suit students preparing for the intermediate and final examinations of the University of London for the B.A. and B.Sc. degrees. There are

more advanced lectures, not intended as preparation for particular examinations, but suitable for candidates for Honours in mathematics or science, and there are students to attend them.

In Chemistry the number of general students is much larger, and courses of instruction in advanced chemistry form a considerable part of the work in that department. The students show a healthy earnestness about their work, and have a chemical society of their own for reading papers and discussing new discoveries.

The Geological school is a distinctive and important feature of this College. In no other college that we have visited is geology made so much of, or so thoroughly taught. The Professor of Geology has a very high reputation both as a geologist and as a teacher; and the neighbourhood of Birmingham lends itself extremely well to the training of students in field-geology. Students come from all parts, graduates of Cambridge and other Universities, as well as foreigners, and work at geology with enthusiasm.

Here, as elsewhere, the elementary lectures on Biological subjects and on Physiology are arranged primarily to provide the preliminary training in science of the medical students. But there are a small number of other students for whom more advanced instruction is provided, and who are doing good work. Several of these are women, and almost all are preparing for some University examination.

In all departments of science the courses of instruction include practical work in the laboratory and—in the case of geology—field-work. In most of them we found some research going on, and the scientific life of the college is generally vigorous.

As already stated, the lectures and classes are arranged generally with a view to the Degree Examinations of the London University. The number of graduations in that University, and still more the honours and successes gained from year to year by pupils of the Mason College, are sufficient to show that an excellent average of work and proficiency is maintained, and that students of good capacity receive at Birmingham the best possible training. Thus in the year ending in February, 1896, the Principal was able to report that in the M.A. examination of the University of London, a male student of Mason College was second, and a female student sixth, on the list, in classics. At the B.Sc. examination seven students obtained the degree, and six took honours, four taking first-class honours, and one first-class honours in two subjects. Indeed, out of twelve first-class honours given to the whole country, five fell to the Mason College.

Former students of the College, both male and female, have also proceeded from time to time to Oxford and Cambridge and obtained very high honours there, while others have obtained professorial and other appointments, both in the United Kingdom and in America, which testify to the excellence of their training.

The College can claim to have carried on its Training Department with marked success. It further has organised a system of Extension lecturing for the Midlands on the lines of the Oxford and Cambridge extension. Its Afternoon popular lectures have also proved very attractive.

It is remarkable that in Arts and Science the women students outnumber the men. Of the whole number of women, more than one-fifth are preparing for university examinations, and the annual list of those that pass such examinations, with and without honours, is creditable to the College.

Beside external tests, college examinations are held at the close of every academic year, and various scholarships, medals, and prizes, in the supply of which the College is rich, are awarded upon the results of them. So far as we can judge from the examination papers, we should say that the aim of the College is to train its students up to a university standard.

The College is fortunate in having endowments for six scholarships of 100*l.* a year each, for the encouragement of higher work and research in physical science. Three of these are for chemistry, one for metallurgy, and two for scientific engineering. There is also a research scholarship (the Forster Scholarship) at the disposal of the Professor of Chemistry. The good of such endowments is not limited to the scholars who hold them; the tone of the place is raised by them, for all students are influenced by what they see going on around them.

Students of the College who have gone successfully through a complete course seem to have little difficulty in obtaining employment. This applies especially to the chemical and geological departments. Most of such students follow industrial pursuits; they go to all parts, become managers of works, mines, and so on. One is at the present time a professor at Harvard College, another is the Government chemist in Antigua. School board scholars who have worked their way upwards and passed through the College have been very successful. One such has obtained a fellowship at Cambridge, and another now holds a scholarship there.

The original endowment of the College by Sir Josiah Mason, together with his gifts and the residue of his estate, amounting to over 100,000*l.*, was on a handsome scale, and in its earlier years the College was even able to accumulate money. It has not, however, received many very large benefactions since its inception.

The Technical school, in the city, maintained by the Corporation has threatened at times to compete unduly with Mason College. At present, however, there is an excellent arrangement in force, by which students only attend this school up to the age of 16, and then, if they wish to continue their studies, pass to the College.

Staff.

On the Arts side, the staff consists of a Professor of Latin and Greek, a Professor of English Language and Literature, a Professor of French, who is also the Professor of Italian, and a Professor of German. There is also an assistant Lecturer in English.

It will be seen that this is a very small staff, and such as cannot be pronounced sufficient for any fully equipped college endeavouring to give an academic training in Arts. Two of the professors are each called on to give all the instruction in two languages, while several very important subjects—notably History, whether Ancient or Modern; Philosophy, whether Ethical or Metaphysical, and Political Economy—are not represented at all. There is also no Law Faculty such as is found in Manchester or Liverpool, but this, perhaps, is of less moment.

The staff of the College in Science consists of—

One Professor of Mathematics and one Lecturer;

One Professor of Physics, an assistant Lecturer, and a Lecturer on Technical Electricity.

One Professor of Chemistry and Metallurgy, an assistant Lecturer, and a Demonstrator of Chemistry, and a Lecturer on Metallurgy.

One Professor of Zoology, and one of Botany, with one assistant Lecturer and Demonstrator for the two;

One Professor of Physiology and one Demonstrator.

One Professor of Geology and an assistant Lecturer and Demonstrator;

One Professor of Engineering and one Demonstrator.

Besides the paid staff there are, in each of the laboratories of Physics and Physiology, two honorary assistant Demonstrators.

The scientific reputation of the professors stands high, and the staff, so far as science is concerned, is both strong and sufficient. Indeed, of the excellence of the professors generally there can be no doubt. One amongst several proofs of this is the fact of their being appointed examiners in various universities, such as those of Oxford, Glasgow, London, and Cambridge, and of Wales.

The emoluments of the Arts professors, notwithstanding that some of them combine two chairs or subjects, are distinctly small. It is very desirable that, if possible, they should be raised, and that some sub-division of subjects, or assistance, should be arranged for.

The emoluments of the scientific professors are reasonable, but by no means excessive, those of the lecturers hardly adequate, though the College seems able, notwithstanding, to command the services of efficient men.

Professors are at present appointed only for three years at a time, a plan which, taken together with the low remuneration on the Arts side, might, it would be thought, deter the best men from applying for the chairs. This does not seem actually to be the case; still we doubt the policy of electing for so short a term.

Buildings.

Mason College is particularly well and advantageously situated in a central position conveniently accessible from all parts of the city, and at the same time near to the chief railway stations. It already possesses a certain amount of land contiguous to the present buildings available for extension, and may hope in course of time to obtain more.

The buildings, which were the work of a local architect, are solid and substantial. They are, perhaps, rather too much "up and down" but the amount of accommodation is considerable, and the general arrangements good. The College is particularly rich in theatres, of which it has no less than five, the chemical theatre in particular being a very large and fine one.

The Arts class rooms are somewhat unequal; there is a want of more rooms, the large English classes having to be accommodated in the Medical School, and there would seem to be a want of private rooms for the Arts professors.

The women students have good reading and common rooms of their own.

Museums and Laboratories.

There is no general Museum. The Geological Museum is a good, well-lighted, room. Only such series of specimens are exhibited as are required for ordinary teaching purposes. But the Museum contains other collections stowed away, accessible for purposes of research, but not arranged, because the College cannot afford the expense which would thereby ensue.

The Zoological Museum contains an interesting collection of specimens, well set up and displayed, but as the same rooms have to serve for laboratory as well as Museum, there is not space for all the collection, and the larger specimens are set up in the lecture theatre. In the Botanical Laboratory there is a considerable and an increasing collection of good botanical specimens, due to the labours of the Professor of Botany. A society in the City, independent of the College, maintains a botanic garden, which is a very important addition to the botanical equipment, and is no expense to the College.

The Laboratories of Physical and Natural Science were fairly well planned and suited to the needs of the College at the time when they were built, but are now becoming outgrown. The Botanical Laboratory, in an annex outside the College walls, has somewhat of a make-shift appearance. Very good work can be, however, and is, done in these laboratories, and it is a more healthy state of things to have rooms full of students than to have much space and few to occupy it.

The Physical Laboratory has a special endowment for the purchase and maintenance of apparatus. In the other laboratories the allowance for maintenance, though it may be as much as the College can afford, is too slender to keep them well furnished. Up to last year one half of the laboratory fees has been given to the Professors, but as new appointments are made, this one half will be reduced to one quarter, in order to enable the College to do more for the equipment of the laboratories.

Library.

In Science the library is well supplied with journals, but not with other works. There is neither money to buy them nor room to store them. The Library building and the allowance for purchase and binding both need augmenting as soon as the revenues of the College permit.

The Library is, however, good as far as it goes. The premises were nearly doubled in size some little time back. On the Arts side the collection of books seemed fair. The Principal's Report to the Council calls attention to the need of a better supply of French books. On the other hand the Karl Dammann Memorial Library of German books is excellent. There is also a want of more books in connexion with English Literature.

Fees.

The fees seem to be about the average in the faculties of Arts and Science, perhaps a little below it in the Science courses which involve laboratory fees. There are two scholarships of not more than 25*l.* each awarded after an examination at entrance, two others of not more than 30*l.* each awarded to students at the end of their first year, and two more to students at the end of their second year. These are given from the funds of the College. To holders of Birmingham School Board Scholarships all the fees are remitted. There is also a Corbett Scholarship (30*l.*) for mathematics, and a Hislop Scholarship (25*l.*) tenable by any who have been for two years pupils in any of the schools on King Edward's foundation. There are also exhibitions from these schools tenable at the College. Moreover, the Government aids teachers to obtain Laboratory instruction at the College by paying three-fourths of their laboratory fees. Associates of the College have the privilege of attending lectures and laboratories free, paying only for materials used.

In some cases scholarships given by neighbouring County Councils are held at the College.

Students do not appear to be kept away to any great extent by the amount of the fees, though now and then a parent says that he could not afford to send his son to the College without a Scholarship. The fees have not been varied at all since the opening of the College, and in the present state of the College finances it would seem a rash step to lower them.

Duration of Course.

The course usually extends over three academic years, and the academic year is the usual one lasting from the beginning of October to the end of June or a little later, with intervals of vacation and examination. The length of the Session is stated as being for the day classes 33 weeks and 4 days, and for the evening classes 30 weeks.

Students.

The students come from all classes of society, but chiefly from the middle, and lower middle, class. The greater part are drawn from Birmingham and its immediate neighbourhood, but there are some who come in daily by rail from greater distances, sometimes as much as 30 miles. Some come from Stafford on one side and some from Gloucester on the other.

There is no residence for students other than those of the Training College, nor are there apparently any Theological or other Colleges in Birmingham supplying students, such as are found in Manchester, Bristol, and elsewhere.

A register of approved lodgings is kept by the Registrar.

Students over 16 years of age are admitted without examination. Those under 16 are examined, the examination differing according as they intend to enter on the Arts or the Science side.

The number of day students in the Faculties of Arts and Science in the Session 1894–5 is given in the Report of the Council as 461, of whom 172 were male and 289 female, and in 1895–6 the number was 500. This last was an increase of nearly 10 over the number for 1893–4, and nearly what it was in 1891–2.

It is worthy of note that the number of attendances on the Arts side, more particularly in the English classes, has increased, while the number on the Science side remains much the same or has slightly decreased. At Birmingham, in contrast with what we found at many other places, there seems to be a tendency for occasional students, and students taking only one course, to increase, while the numbers of those preparing for University examinations remain almost stationary, and there has been in the last year a slight falling off in the number of teacher students. The evening classes show an increase in the last year of about 40 per cent. above the numbers of the three years preceding, bringing them up to what they were in 1891–2.

This increase in the number of students is the best proof that the College is doing good work, and work appreciated by the district which it serves. A further proof may be found in the presence on the Governing Body of many of the leading citizens of Birmingham, and in the number of their attendances at Council and Committee meetings, which shows that their connexion with the College is real and effective.

T. H. W.
G. D. L.

(8.) UNIVERSITY COLLEGE, BRISTOL.

University College, Bristol, was founded in 1876, exactly twenty years ago, its object being to "promote the education of persons of both sexes, and the study and "advancement of Science, Literature, and the Fine and Mechanical Arts."

Its establishment was much aided by the action and liberality of Balliol and New Colleges at Oxford, and it has always had on its Council representatives nominated by these colleges, as well as by the Universities of Oxford, Cambridge, and London.

With regard to the quality of the work done: on the Arts side the general standard of the lectures and instruction is good. The Professors in many cases evidently take great pains with pupils individually. Thus in Latin and Greek the numbers are not large, but the standard attained is distinctly high, and indeed, considering the short time during which many of the students have studied these languages, remarkable.

The Professor and his assistant carry their pupils in many cases from almost the elements up to a university standard, and we were much impressed with the completeness of the training thus given.

The instruction in Mathematics appears excellent, both in method and in manner. In Physics and in Chemistry the instruction is thorough, and includes adequate training in practical work, while in regard to the advanced portion of the subjects it is in some respects more complete than in many of the other colleges. In many cases women students attend the advanced classes, and we found two ladies at the present time engaged in carrying on research work in the Chemical Laboratory.

The preliminary scientific training of the Medical students serves to fill the class rooms in Biology and Physiology, and determines in a great degree the character of the lectures, but there are a few other students who share the lectures with them. Attention is paid to systematic Botany, a branch of the subject now too frequently neglected.

Thus on the Science side generally, as on the side of Arts, it may be said that there is evidently vigorous life in the place, and that the work done is of University type.

The lectures are arranged to suit students preparing for the examinations of the University of London. In these examinations the College shows a fair record, considering the number of its students, as regards both Honours and Passes. Former students of the College have also obtained, at various times in the last few years, high honours at Oxford and Cambridge, the women students perhaps more especially in History.

On the Arts side it may be noted that the women students as a rule content themselves with the College Examinations. The system of these is very thorough, and the questions proposed give evidence of a good standard.

Besides the regular day work of the College, there is an extensive system of Evening Classes, covering almost all the subjects taught in the College. These are attended by a considerable number of students and add not a little to the work of the Professors. Many of the evening students are persons engaged during the day in teaching.

Staff.

The Professorial Staff comprises on the Arts side, a Professor of Greek and Latin, one of Mathematics, one of Modern History and English Literature. There are also two Lecturers in French, a Lecturer in English and German, in Hebrew, in Italian, and in Harmony and Musical History, and an Assistant Lecturer in Greek and Latin.

On the Science side there is a Professor of Experimental Physics, a Professor of Geology and Zoology, of Chemistry, and of Engineering; and Lecturers in Chemistry, Experimental Physics, Botany (2), Zoology, and Engineering (3). There are also a Demonstrator of Chemistry, a Teaching Scholar of Physics, and a Workshop Demonstrator.

The Principal acts as Professor of Geology and Zoology; the Professor and Lecturers on Physiology belong to the Medical School, but lecture in a building within the College precincts, and include in their classes a few besides medical students.

It will be seen that this staff is not a large one, and that several of the Professors are called on to teach more than one subject. When to this fact is added the consideration that the students vary very much in attainment, and that the Professors have to provide classes to suit students of different degrees of advancement, it will appear that their hours of work are very much multiplied. It is very desirable that there should be somewhat more sub-division, and that new Professorships, or Lectureships, should be added. In particular it would appear desirable that there should be a separate Professorship of English Literature and Language. It may be noted too that at one time the Professor of Greek and Latin voluntarily held classes in Philosophy and Logic. He has been obliged, however, to give them up from want of time, and these subjects are not now represented. In Mathematics again, the Professor at present does the whole of the work single-handed. This is too much for one man, and assistance is much needed.

There is no endowment for Professorships excepting a small fund collected by students for the aid of Classics and Literature.

It may be noted, perhaps, that several of the former Principals and Professors have been preferred to posts of emolument and distinction elsewhere. The first Principal is now Professor of Political Economy at Cambridge, the second is Professor of Chemistry in University College, London, while another former Professor and Associate of the College is Professor at the University College, Liverpool, and another is Professor at the City and Guilds Technical Institute.

The emoluments of the Professors, notwithstanding the fact of their representing in several cases more than one subject, and having so many hours of work, are distinctly small, only one Professor, that of Engineering, receiving more than 500*l.*, and only three anything over 400*l.* per annum.

On the other hand the Lecturers and Demonstrators, if their stipends are limited, are at least as well paid as persons similarly situated at the other colleges.

The Buildings.

The College is very well and agreeably situated, and the buildings, as far as they go, though small, are good, and very fairly well arranged. Such lecture rooms as there are, though not large, are well lighted and arranged. There is, however, a distinct want of more lecture rooms. Much inconvenience is felt from the necessity of holding lectures in a variety of subjects in the same room. At present, for instance, Greek, Latin, Geology, and Biology have all to be taught at different hours in one room. A room for the Principal is much needed, and some additional rooms might be provided for the Professors.

As regard Laboratories, these also are not large, and though at present sufficient, should the numbers of the students increase, they would soon outgrow the existing accommodation. This indeed may be said to have already happened in the case of the Biological department. It should be noted, with regard to the Laboratories, that the allowances for maintenance in the various departments are decidedly small.

Museum and Library.

There is, fortunately for the College, a public Museum and subscription Library immediately adjoining the College, and the Medical School has a very good Medical Library of its own, placed in the new building within the precincts of the College. Of these the College is able to make considerable use, and is much helped by them.

The public Museum, indeed, is a larger and more complete one than the College could expect to possess, or afford to maintain, and only needs to be supplemented by the typical collections required to illustrate the lectures. These the College is gradually acquiring.

The subscription Library, again, possesses a number and variety of volumes which the College could hardly hope to purchase; but while it may supplement a College Library, it cannot supersede the pressing want on the part of the College of a good general Library, with facililties for reference and reading, suited to the needs of the Professors and students, and kept up to date. One of the objects which the College has most immediately in view is to build a new wing for Chemistry, and to provide such a Library in the block now occupied by the Chemical Department, an arrangement by which the whole life of the College would be most beneficially affected.

We wish to note that there is a small but well-arranged Botanical Garden within the grounds of the College, of which the advantage to the students is considerable.

Fees.

The fees seem to be moderate, neither high nor low as compared with those of other Colleges on the whole, though somewhat higher than those of the Northern Colleges. We were told that some time ago composition fees at a reduced rate had been introduced, and that quite lately the rate of reduction had been increased, the reduction now amounting to one-third for the whole course. This reduction would seem to have produced an increase in the number of students taking the whole course. There has been generally a great increase of late in the number of courses taken. The authorities are of opinion that the fees are generally pretty easily borne by the students who come to the College, but they have evidence that a certain number of students are drawn off to the Welsh Colleges by the lowness of the Welsh fees, more especially to the neighbouring College of Cardiff. Opinion was divided in the College as to the policy of still further reducing the fees, but all were agreed that such a reduction would financially result in a loss.

Duration of Course.

The duration of the course is the same as elsewhere, three academic years, the length of the annual Session being 30 weeks.

Students.

There is no matriculation examination. The students are distinguished by their taking one, two, or three courses. The largest number take three, the smallest number take two.

In the day classes, on the Arts side, more especially in the classes in History, Literature, and Modern languages, we were struck by the preponderance of women. The numbers returned however, show that, apart from the Training College students, who are all women, the male students preponderate, though there is a very good attendance of the other sex.

The students are drawn mostly from Bristol and Clifton and the surrounding country, including such neighbouring towns as Bath, Weston, Clevedon, &c., from which places students come in by train. There is no residence for students except that for the day training students. Some of the best students on the Arts side are those from a Baptist College in the neighbourhood. Engineering students are drawn from all parts of the country, and indeed of the world, the instruction in this department being of a more specially technical character. The Training College students, again, come from all parts. Of late the authorities have endeavoured to encourage Training College students from Bristol, and with success. The students, exclusive of this last class, are drawn from all ranks of Society, but there is a preponderance of those belonging to the higher classes. There has been somewhat of a decline in the number of lady students from Clifton, and it has been supposed by some that this may have been consequent upon the admission of the Training College students, but the evidence upon this point is not sufficient.

The competition of a well-endowed Technical College recently established in Bristol, and teaching many of the College subjects at very low rates, would appear to have drawn off some students, and there are in the neighbourhood some other establishments which compete with the College, charging lower fees, and specialising in the preparation for particular examinations.

On the whole, though there have been successive waves of depression, the numbers of the students taking a full course of three years have steadily increased, which is good evidence that the College is appreciated by the district it serves. Further evidence in the same direction is supplied by the fact that a recent appeal for increased pecuniary support has been more rapidly and generously responded to than an appeal made some years ago.

T. H. W.
G. D. L.

(9.) THE DURHAM COLLEGE OF SCIENCE, NEWCASTLE-ON-TYNE.

The Durham College of Science at Newcastle-on-Tyne was originally, as its name implies, a College of Science, placed in Newcastle, but founded and maintained under the auspices and by the generosity of the University of Durham. As such it commenced operations in 1871 in some very limited premises near the railway station, with a teaching staff consisting only of Professors of Mathematics, Physics, Chemistry, and Geology. About nine years ago the College moved to its present, much improved site and buildings. It has also much enlarged its scope, and includes now, beside the sciences above named, Metallurgy, Crystallography and Mineralogy, Natural History, Mining, Agriculture and Forestry, Engineering and Naval Architecture, and Botany. It has also added departments of Literature, including History, Logic, and Philosophy, of Law, of Fine Art, and a Training Department, and it provides technical instruction in Materia Medica, Carriage Building, Telegraphy and Telephony, and Typography. The distinguishing feature of the College is its connexion with the University of Durham, a connexion brought home to the visitor from Oxford or Cambridge by the wearing of the gown on the part of the students as well as the teachers. Its students are admitted, under certain special conditions of residence at Durham, to the ordinary degrees of that University; but beside this they have two degrees of their own, instituted for them by the University of Durham, those, namely, of Bachelor of Science and Bachelor of Letters.

We were particularly impressed by the importance of this factor in the constitution of the College. We found that the Professors were agreed, and that there was strong and various evidence to support their view, that these degrees have had a most stimulating effect upon the studies of the College. On the Arts side particularly, the

institution of the degree of B.Litt., which is still of very recent date, has already exercised a most marked influence, alike in attracting students and in elevating the standards aimed at and attained.

Thus while the whole number of both day and evening students, which had somewhat declined, seems again increasing, there is an even more marked increase in the number of those who pursue regular courses, and also in the number of those reading for each of the degrees above named. These facts point to an increasing amount of work of what may be called an academic type ; and while we found little or no work of the most advanced kind being done in the College, there is a large quantity that is distinctly above what is elementary, the students being rapidly brought on from the lower stages, and the general average attained being decidedly good.

A certain number of students are still successfully prepared for the examinations of the London University, while the College has also from time to time sent students to the older universities, more especially to Cambridge, where some of them have won first-class Honours. Several former students of the College have also been appointed to important teaching and other posts, while its Mathematical Professor, to the credit but also to the serious loss of the College, was the other day translated to the chair of Mathematics at Durham. The amount of research work done in the College is perhaps not very large, the size and variety of the classes and the evening work not allowing the Professors very much time for themselves, but valuable investigations have been, and are being, carried out by both Professors and former students. Among such pieces of work it is interesting to note the investigations by a woman student of the Temperature Gradients of Boiler Plates.

Although they do not exactly come within our purview, we should wish to call attention to the marked successes of the students in the Agricultural and Training Departments carried on by the College. It may also, perhaps, be mentioned that last year one, and this year two, students have been successfully prepared at the College for the Examination for the Indian Civil Service. An interesting attempt is being made by the College to develop a course of Legal training for persons engaged in solicitors' offices in Newcastle, to lead up hereafter to the legal degrees of the University of Durham.

The lectures which we heard on the Arts side were good and of academic type. The majority of students attending the classes in Latin, in Philosophy, and in English were women. Many of them were students from the Training College. The standard which they seem to have reached in a comparatively short time was very creditable alike to them and to their teachers. In German the numbers were more equal, though the women predominated. Here, again, the students seemed able to follow and profit by teaching of a fairly high kind, and the standard reached was very creditable. We were informed that the institution of the degree of B.Litt. has had a very excellent effect on the study of the modern as well as the ancient languages, and though the numbers of students in all these subjects are small, and those in Greek still smaller, they seem to be decidedly growing.

The lectures on Mathematics are organized with reference to the examinations of the University of Durham for the Associateship in Science, the B.Sc. to which the associateship is preliminary, and the B.Litt. These are all pass examinations, but the standard of the examination papers is certainly high for pass examinations, and Honours are awarded in particular subjects on the results of these examinations. A good deal of pains is taken to make the instruction effective throughout, and the first year students are divided into many classes, no doubt much to their advantage, though it makes much labour for the lecturers. There are evening classes corresponding to the general day class in Mathematics, which are fairly well attended. The number who pass the above-mentioned examinations is considerable, and an advanced course in Higher Mathematics, given this year for the first time, has attracted four graduates, and must be regarded as a feature of much promise.

In Physics the courses are organized on the same principle as those in Mathematics. An increasing number of students attend the third-year course, which includes the work required for the B.Sc. examinations of London and Durham, and in the last year several obtained Honours in Physics at the University of Durham. Nearly all students who attend lectures do practical work as well, and the whole number now using the Laboratory exceeds 100. The evening courses include one for students preparing for degrees in Science, with a Laboratory class, which is well attended. Some graduates are doing research work in Physics, mostly holders of scholarships granted by the Commissioners for the Exhibition of 1851.

The College of Medicine is an entirely separate institution, nevertheless students of that College come to the College of Science for instruction in Physics, Chemistry, and Biology. They have, however, special courses on Physics and Biology.

In Chemistry the courses are arranged with regard to the examinations of the University of Durham. There is a fair-sized third-year class in Advanced Chemistry, and it is a growing one; and the number obtaining honours in Chemistry at the University examinations is as large as could be expected. There are special courses, theoretical and practical, on Agricultural Chemistry and on Metallurgy, also evening classes at which students can qualify for degrees in Science, and Saturday classes for teachers. A few graduates continue their work at the Chemical Laboratory for a time. Those who have gone through a complete course of Chemistry at the College seem frequently to obtain technical appointments; some have distinguished themselves at Cambridge and elsewhere.

The Geological Department is a flourishing and a growing one. Several students take up Geology for the B.Sc. degree, and a fair number of them obtain honours. Field work is made an important feature of the course, as well as Practical Petrology and Palæontology. Several former students of the College have helped by their researches to advance the Science.

The College is fortunate in having for its Principal one who is able to undertake not only the Professorship of Mathematics, but also that of Crystallography and Mineralogy, and has instituted lectures and practical instruction in these important, though in England much neglected, branches of Science. These subjects enter this year for the first time into the examinations of the University of Durham, and there is a small class, besides the geological and mining students, studying them with a view to those examinations.

The courses in General Biology are very much what is required for medical students. The Botanical Department is flourishing, the course of instruction extensive and good, and special attention is paid to experimental Plant Physiology. The advanced classes at present are small, but there are two graduates at work on researches in Botanical Pathology. There is a small Botanic Garden, and instruction in systematic Botany is attended to. There is a special course for Agricultural students, and one for Medical students, also an evening class and a Saturday class.

Staff.

The Professorial Staff includes, on the Science side, a Professor of Mathematics, of Physics, of Chemistry, of Geology, of Natural History, of Mining, of Agriculture and Forestry, of Engineering and Naval Architecture, and of Botany, with Lecturers in Mathematics, Physics, Chemistry, Agricultural Chemistry, Metallurgy, Crystallography and Mineralogy, Agriculture and Forestry, Veterinary Anatomy and Farm Hygiene, Engineering and Naval Architecture; and on the Arts side, of a Professor of Literature and Classics, with Lecturers in Latin and Greek, in History, in Modern Languages, in Logic and Philosophy, and in Law. There are also assistant Lecturers in Mathematics (2), in Physics, in Chemistry, in Mineralogy, and in Modern Languages, and a Demonstrator in Chemistry. Besides these the Training and Art Departments have each their staff, and there are Technical Classes in Materia Medica, Building Construction, Carriage Building, Plumbing, Telegraphy, and Typography.

It will be seen that the staff on the Science side is, speaking generally, a very complete one, and well able to do the work required of it. It should be noted, however, that the College, as mentioned above, lost its Professor of Mathematics at Christmas last by his preferment to the Professorship at Durham, and that the Newcastle chair is at present filled temporarily by the Principal, who performs the duties gratuitously in order to help the finances of the College. It need hardly be said that no first rate College of Science is properly equipped without a full Mathematical Professor, who can devote all his time to his subject, and it is highly desirable, as the Principal himself feels, that the College should be able without delay to provide and pay such a Professor. The need is the greater, as most of the courses are given on four or five days a week, and there are several evening classes, including a very large one of engineering students. In Physics the work falling on one Professor with two assistants includes special classes for medical, and mining, students and for teachers, as well as evening classes and exercise classes, and seems almost too much, especially as the department is a growing one. In Chemistry the staff is larger, but none too large for the work. The Professor of Geology is single handed, and any considerable increase of the number of

his pupils would necessitate the appointment of a demonstrator. Mineralogy is adequately provided for. In Biology there are two professors, but the bulk of the work falls on the Professor of Botany, who must have help if his department continues to grow.

On the Arts side there is need of better and more assistance in the teaching of English Literature, and of History. The first falls on the Lecturer in Classics, who is helped in his classical work by the Lecturer in Logic and Philosophy, while, as regards the latter, one Lecturer has to supply both elementary and advanced teaching over the whole field of History, Ancient and Modern, as well as Geography, and as there is a great deal of elementary and intermediate work needed for the qualifying examinations for both of the degrees, as well as for the Training students, his task is not a light one. In both these subjects, however, in our opinion, the true economy would be to co-operate more fully with Durham University. It is to be hoped, and it is probable, that the University may hereafter develope in particular the study of History, instituting a Professorship and organizing Honour Examinations in this subject.

The Modern language teaching at Newcastle in the three languages, French, German, and Italian, is undertaken by one man, with some help in French from one of the Assistant Lecturers in Mathematics.

The Professors are appointed by the Council, and are removable upon six months' notice by the same body, but the power of removing has been seldom, if ever, exercised.

The scale of the emoluments of the staff at Newcastle, though not so high as that at some of the largest Colleges, is distinctly good, and the rate of remuneration is more equal than in many places. No Professor receives so large a stipend as is paid in some instances elsewhere, but on the other hand the amounts paid to the regular Lecturers and Demonstrators do not fall so low as those we have noticed in some Colleges. In some subjects, such as Crystallography and Mineralogy the stipend is merely nominal.

Buildings.

The buildings which the College now occupies are, so far as they go, decidedly good, well and happily placed, handsome in appearance, well arranged, lighted, and ventilated. In particular the Johnston Chemical Laboratory is one of the finest we have seen, and excellently fitted up. The lecture threatres, both for Chemistry and Physics, are excellent, and the general rooms and premises of both these departments are also very good, while the premises assigned to the Engineering Department and the Art School are again among the finest of the kind we have anywhere seen. The Physical Department is thoroughly equipped with electrical apparatus, though in some other branches of Physics the equipment for higher work needs to be supplemented. The arrangements for Biology are less good. In the Department of Botany there is a deficiency of apparatus and of books.

The weak point of the College as regards buildings lies in the accommodation for the Arts side. There is a real and pressing want of lecture and class rooms for the teachers on this side. Many of them have at present to use, at considerable inconvenience, rooms belonging to the Science Department. The present accommodation also for the Principal and Secretary is inconvenient and insufficient. There is, further, much need of a Library and of a good Common room for the men students. The women students have already a very nice Common room. Plans have been prepared for a new block of buildings, which would, if erected, supply very adequately all these needs, beside providing accommodation for the Training College Students and Agricultural Departments.

Museums.

The collection of Zoological specimens belonging to the College is very defective, and the room used as a Museum of Natural History is unsuitable for that purpose. At a short distance from the College, however, there is a very fine public institution belonging to Trustees, the Hancock Museum, which contains in particular unusually good collections of Birds and of fossils from the Carboniferous strata. The Trustees kindly allow to the College every facility for profiting by the Museum, which, it need hardly be said, is of great use to both Professors and students. In the Botanical Department of the College there is a good departmental collection of Botanical specimens, made by the Professor, and it is still increasing. There is a good collection of Geological specimens in the College, but it is ill-housed in temporary premises.

Library.

The College can hardly be said to possess a Library. It has rather the beginnings of one in a collection of books, the result of private donations, placed in a temporary room on the second floor. For a beginning, both room and books are good, and most useful to the students. But it is eminently desirable that the College should be able, at no distant date, to expend an annual sum in purchasing and maintaining a good reading and reference library for College purposes, and also to provide suitable premises for its accommodation. There are, it should be noted, two good libraries in the town, the Public Library, and the Library of the Literary and Philosophical Society, to which the Professors and students can obtain access, but these, as we have said in other similar cases, though a valuable aid, do not remove the need to the College of a Library of its own.

A slight raising of the Fees with a view to helping the Library has been considered, and may be attempted, but it can only be very slight, in consideration of the circumstances of the students.

Duration of Course.

The session, for both day and evening students, extends over 33 weeks in the year. A full College course covers three years, but on an average the students probably remain only two years. On the other hand some continue for four, or even five, years.

Students.

In the Session 1895–6 there were 499 day students, including the students in Fine Art, and 1092 attending evening classes. Not all the students are matriculated, matriculation in the Newcastle College implying a qualification of some sort, though the qualification is not at present as high as the College hopes hereafter to make it. The ideal of the College would be to make the present first examination for the degree of B.Litt. the College matriculation examination, but in the meantime the College has to content itself with requiring some evidence of fair general education. There is a certain number of occasional students. The majority of the students are drawn from Newcastle and Gateshead, but a considerable number come in from the surrounding country and towns, such as Bishop Auckland, Shields, Stockton, and Darlington, or again Alnwick, Morpeth, and Berwick.

The Durham College of Medicine is, it should be remembered, quite independent of the Science College, but sends its students to the College for certain classes. An institution in the town, the Rutherford College, to some extent competes with the College of Science in providing elementary scientific training, more particularly in Chemistry. About twenty students attend the lectures in Law, which have been just recently organised by the College in concert with the Solicitors of Newcastle.

The majority of the students come to the College with some practical end in view, such as becoming teachers, or in a great many cases engineers, whether mining, mechanical, marine, or electrical. There is a considerable number of very poor students, and many at entering must be pronounced to be very rough, but, as a rule, these improve in a marked way after passing a short time at the College.

Two Hostels have been started, one for male the other for female students. We visited both, and were favourably impressed by them, but both are at present only commencing, and are not yet full. It is found desirable to keep the fees for these low, and it is further found necessary in all departments of the College constantly to remit fees of students on grounds of poverty. The Durham degrees in Medicine attract a certain number of women students in that subject from all parts of the country.

That the College is appreciated by the district which it serves is best shown by the numbers of the students. The Arts side of the College is, it should be remembered, of recent growth, but, especially since the institution of the degree of Bachelor of Letters, it has made a very marked advance and shows promise of yet further growth. We had some evidence of the interest taken by leading citizens of Newcastle, and by persons of position in the neighbourhood, in the work of the College.

T. H. W.
G. D. L.

(10.) UNIVERSITY COLLEGE, NOTTINGHAM.

University College, Nottingham, presents two features, both worthy of note, and one unique.

(1) Like several others of the University Colleges, it grew out of the University Extension movement.

(2) It was mainly founded, and is chiefly maintained and managed, by the Corporation of Nottingham.

That a municipal corporation should thus recognise the needs of higher education, and that it should have the support of the community in so doing, is a very remarkable thing. It is not to be wondered at that at one time this policy should have been severely criticised and much opposed in Nottingham, but we had good evidence that the College is now thoroughly popular, and that the money, amounting to a penny rate, which is voted for its maintenance, is given by the citizens with good-will and even with some amount of pride in the institution. The object of the College, as described by its promoters, is primarily to supply higher literary and scientific education for the people of Nottingham over the age of 16, but a certain number of students under 16 are also admitted at the discretion of the Council. The College, being thus supported mainly by the rates, may be said to be the most democratic institution of the kind which we have seen. One conspicuous feature of it is the large amount of work done in evening lectures and classes, and for very low fees, so as to meet the needs of persons engaged during the day. A great deal of this work is in the nature of things of a somewhat preparatory kind, and there is throughout the College a great deal of work of not a very advanced character. At the same time higher work is not wanting, though there is not perhaps so much of the highest kind as may be found in some of the University Colleges. The higher work in Arts and Sciences consists mainly in the preparation of students for the examinations of the London University. The number of actual graduations in that University has been and remains small, but on the whole it has steadily increased. It should be noted that there has been a much greater, and very marked, increase in the number of students preparing for, and passing, the earlier examinations for the degree, but the small means of the students in a large number of cases prevent them from continuing up to the degree. There have been, however, some remarkable instances of persons who have been enabled, by the opportunities afforded by the College, to acquire at a very small cost an education of the highest kind. One person at least has thus won his way from the position of a working man in Nottingham to being a D.Sc. of London University and a scientific teacher of repute.

A large amount of work is done by the College in preparation for the examinations of the Government Science and Art Department. There is also an extended system of technical courses, and a Day Training College. These do not fall within our purview, but form so large a part of the work of the College that their existence ought to be noted. They appeared to us to be well organised, active, and successful. A noticeable feature again of Nottingham College is the very large proportion of work done in the evening classes. In the Report to the Education Department for 1896, the evening students appear to stand to the day students in the ratio of three to one.

The teaching on the Arts side is generally good and sound, the ground-work is well laid, and care is taken to make certain that the students follow and understand the lectures, while every effort is also made to carry the better students as far as possible, and to give them some insight into the full scope of their studies, and a living interest in their subjects. The higher classes in Latin and Greek are small, and the time which the students can give to these languages is limited. Here, as at some of the other colleges, the progress which is often made, more especially by women students, in a comparatively short period, is very remarkable. The study of German seems somewhat to languish. It might have been expected that among so many students of Physical Science more would have desired to learn this language, so useful to the scientific student.

Mathematics are efficiently taught; the number of students altogether is considerable and the classes numerous, but by far the greater part are in the elementary stage. There is a fair-sized class, of about equal numbers of men and women, taking the Mathematics, pure and applied, for the Intermediate examinations for B.A. or B.Sc. of the University of London; and a very few preparing for the final pass examinations for those degrees; and there is a class of Engineering students taking Mathematics of about the same range.

Of the classes in Physics much the same may be said as of those in Mathematics. Much pains is taken to give those preparing for the University examinations practical training as well as lectures, and they are put through carefully prepared courses of experimental work. The Engineering students get a training in theoretical and practical Physics apart from their technical instruction. The evening classes in Physics include several students preparing for University examinations, who attend the laboratory as well as the lectures.

Chemistry occupies an important place in the system of the College, and this department is certainly vigorous and doing good educational work. The classes in elementary Chemistry are well attended, those in advanced Chemistry attract fewer pupils. A fair number of students are preparing for the Intermediate examination for B.Sc. of the University of London, and a few for the Final examination for the same degree. There are a good many classes of a special or technical character, of which several are well attended. All the students are put through courses of practical work in the laboratory, and seem to be well looked after, and there are always some doing advanced practical work, or assisting the Professor or Lecturers in some research.

The instruction in the Biological Sciences seems to be excellent, as far as it goes, and quite of University type. The classes in Botany and Zoology preparing for the Intermediate and Final examinations for the B.Sc. are as large as the corresponding classes in Chemistry. There are regular courses of practical work and of field-work in Botany. The Geological and Physiological classes are at present somewhat in their infancy, but both give promise of developing in a satisfactory way and deserve encouragement. Bacteriology is a subject of instruction and of original investigation at the College. Primarily it is taken up with reference to Agriculture, but Bacteriology can hardly, at least at present, be narrowed down to mere technicalities, and may fairly be regarded as a branch of biological science well conducted at the College and very promising.

The College is affiliated to the Universities of Oxford and Cambridge, and students who have gone successfully through a specified course at Nottingham can graduate at Cambridge, after having resided there for six terms instead of the usual nine. Practically none avail themselves of this privilege, and the affiliation has no sensible effect except to give the Universities some voice on the Committee of the College.

It is remarkable indeed how few of the students of the College aim at graduating at all. It is possible that the smallness of the fees attracts to the College a class of students who do not intend to follow callings in which the possession of a degree is supposed to be an advantage, and who are content with obtaining an education of a higher type than they get at school, accompanied by a College Certificate, or it may be a Cambridge Vice-Chancellor's Certificate, of their attainments.

Professorial Staff.

The Professorial Staff includes a Professor of History, Literature, and Political Economy, of Latin, Greek, and Philosophy, of Mathematics and Physics, of Botany, Biology, and Geology, of Chemistry, and of Engineering.

There are also Lecturers and Demonstrators as follows :—In French and Spanish (1), German (1), and Italian (2), Anglo-Saxon (1), Hebrew (1), Botany and Biology (1), Chemistry (5), of whom four are Lecturers, in Physiology (1), in Physics and Mathematics (6), and in Engineering (2).

Beside this some assistance is rendered in Arts and Sciences by the staff of teachers provided for the Day Training College, and for the Government Science Classes.

Taking the Arts side, it will be seen that the staff is small, and that a few teachers are called on to cover the whole field of Arts. Such an arrangement cannot be considered as sufficient for a University College which is to give a complete academic training of the higher kind. Further help is needed both on the Arts and on the Science side. The Principal's hands are at present much too full, and an additional teacher is required to relieve him of part of the work in Languages and Literature. In Mathematics again, one man is Professor of both the pure and the applied branches, and though he has a sufficient number of Assistants and the organisation is good, the arrangement appears to throw too much on one man, if he is to keep abreast of new developments in his department. In the Biological Sciences, including Geology, there is only one Professor, who has but one assistant, beside the teacher of Bacteriology and Physiology, and here too more help is needed.

The general arrangement of the College seems to be to divide the work under the five Departments, to give great power to the heads of these Departments, and to provide a large number of assistants and demonstrators, at moderate stipends, to work under them. On the whole this system seems to work well, but involves a constant change of *personnel* among the class of teacher last named, as they move on to more lucrative posts elsewhere.

The emoluments of the Professors are not large. They receive a fixed stipend, and also a proportion of fees, but there is a total superior limit of 650*l*. The stipends of those Lecturers and Demonstrators who do full regular work appear to be generally fair, though not large. In some cases they are very small.

Buildings.

The Buildings are, speaking generally, very good. They are excellently situated in the centre of the town, airy, well-lighted, and for the most part well arranged. The Lecture theatres are good, the largest being a very fine room, and so are the class-rooms. The Laboratories are generally good and well supplied with apparatus, and the College is well off on the Science side, more particularly in the Chemical Department as regards both lecture theatres and separate rooms for the Professors and Demonstrators. There is, perhaps, a want of rather more private rooms for the Professors and Teachers, except the heads of departments, who are already well provided for.

Library and Museum.

The arrangements for the Library and Museum are peculiar and call for note. The College has no Library or Museum of its own, but the Municipality, in building and equipping the College, has erected, as part of the same block of buildings, a fine public Reading and Reference Library, which it maintains at a cost of some 3,000*l*. per annum. Of this both the Professors and students of the College have the use, special facilities being accorded to the Professors. While, of course, such a Library is not in every way a substitute for a College library, it is on the other hand a far finer and better supplied institution than any that the College could hope to maintain for itself exclusively, and it is very well adapted for the wants and means of the mass of the students. There are, beside this library, small collections of books belonging to the different departments. The Museum may be spoken of in much the same terms as the Library. The College has no general Museum of its own, but the Town Council has erected and maintains a good public Museum, in a block forming part of the College buildings, and accessible from the College.* This again is more handsome and extensive than anything which the College could hope to possess exclusively for its own use. There are also small collections for educational purposes, belonging to the different departments.

Fees.

The fees at Nottingham are distinctly low. The fees for day classes are from 15*s*. to 20*s*. per term, for classes meeting two hours a week, with laboratory fees of from 25*s*. to 40*s*. per term for six hours a week. The evening fees are about one-third of the above. Taken altogether these are the lowest fees we have come across, with the exception of those at Reading and Exeter, but in view of the fact that the College is mainly supported by the rates, there would seem to be no impropriety in the scale adopted. We were told that the College was decidedly of opinion that the number of evening students was not a little due to the low fees, and that the scale could not be raised without the danger of much diminishing this number.

Duration of Session.

The session consists of three terms, each lasting 11 weeks. The majority of the day students attend the College for two years. There is a want of scholarships to enable poor students of promise to remain a third year.

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* Students of the College can have facilities for studying specimens by applying to Professor Carr, the Professor of Biology, who is the Curator of the Museum.

Students.

The number of the students in the year 1894–95 were as follows:—Day students, 453 evening students, 1,353, giving a total, allowing for 226 who attended both day and evening classes, of 1,580. The corresponding numbers for 1895–96 were 456 day students and 1,385 evening students. The College does not keep separate statistics of male and female students. Judging from what we saw, we should say that there was no great disparity of the sexes. To be admitted as day students persons must be over 16. To the evening classes they are admitted as young as 15, if they have passed the sixth or seventh standard.

The numbers have fluctuated a good deal in the history of the College, but of late have been very steady. There has been an increase in the number taking complete courses, but the number actually graduating in the University of London, though varying somewhat, has remained small. There has been a decided increase in the number of those who have begun reading for degrees and have passed the first stages, but very many are unable, through want of means, to give the time necessary to achieving the final stage.

The majority of the students are poor and many are very poor. Not a few are withdrawn on account of poverty.

The possibility of arranging for a Hostel for students from a distance has been considered, but the small means of the students has been found to be an obstacle. A certain number come to reside in Nottingham either with friends or with private families, and are received at the rate of 14*s.* a week for men, and 12*s.* a week for women. The majority of the students, however, actually live in Nottingham. About one-twentieth come in by train from neighbouring towns, such as Derby, Burton, Macclesfield, Newark, Grantham, and Beeston. The students belong mostly to the lower middle class. A large number are the children of board school teachers, others children of clerks, shopkeepers, &c. Among the women students there are somewhat over fifty of a higher social grade, daughters of professional people and the like in the town, who attend the College. There is a Baptist College in Nottingham, which sends most of its students to the College.

Most of the students come with some practical object in view. A large number intend to take up teaching in some form. On the Science side many are qualifying to become inspectors of different kinds. There are also a considerable number of Pharmaceutical students, sent by the chemists in Nottingham.

The students have an association, and bring out a magazine of their own, and have also several athletic clubs, but these are perhaps not so vigorous as those at some of the other Colleges which we have visited.

That the College is appreciated by the town of Nottingham, and the district which it serves, there can, we think, be no question. We had independent evidence that, whereas there was at one time considerable opposition to the policy of expending municipal funds upon such an institution, not only is there now no question as to the propriety of so doing, but the College is regarded favourably, and with a certain pride, by the community in whose midst it is placed.

T. H. W.
G. D. L.

(11.) FIRTH COLLEGE, SHEFFIELD.

The history of Firth College, Sheffield, is at once interesting and instructive. Like the University College at Nottingham, as well as the more recently established Extension Colleges at Reading and Exeter, it arose out of the University Extension movement. As originally founded by Mr. Mark Firth in 1879, it was intended as a hall and lecture room for Cambridge Extension lectures, but the idea of making it a University College for Sheffield very soon found favour. The Founder gave a further 10,000*l.* besides the buildings, and 12,000*l.* more was added by other donors. Annual subscriptions were also raised to aid in maintenance, and the College gradually took its place among the University Colleges of the country. The Technical Schools were at first little more than a side development of the original College. Two years after the building of the College in 1881 a beginning was made of technical teaching by the establishment, with the help of the London City and Guilds Institute, of a Professorship of Mechanical Engineering. Funds were raised locally for maintenance

and appliances, and by degrees technical schools were established under the direction of the Council of the College, acting together with representatives of the subscribers. The Drapers' Company of London gave further assistance in 1889. Shortly afterwards the town council of Sheffield, availing themselves of the Technical Instruction Act, took over the support of the Technical School, with an agreement that it should be managed by a joint committee of representatives of the Council of Firth College and of the subscribers. To this happy and advantageous combination a further addition is even now being carried out. Sheffield possesses an old-established Medical School, and has two large hospitals, the Sheffield General Infirmary with 200, and the Sheffield Royal Hospital with 105 beds, besides a small Women's Hospital with 45 beds. With all three of these the Sheffield Medical School is connected, and it possesses good rooms adjoining the Firth College. It is proposed now to amalgamate the Medical School with the College, and steps have been taken to seek a Royal Charter uniting the three institutions, the Firth College, the Technical School, and the Medical School, in one "University College of Sheffield." To carry this out, and make the additions necessary for a fully-equipped University College, a sum of at least 35,000*l.* is required. This sum is now being raised. The greater part, some 31,000*l.*, has been promised, and 20,000*l.* has actually been paid and is producing income, by means of which some of the additions have already been effected. Meanwhile the College is also applying to be admitted as a "constituent college" to the Victoria University. That application, however, remains in abeyance until the incorporation of the College itself shall have been completed by the granting of the Charter.

Firth College still shows in more ways than one traces of its early history, and of its having grown and developed only very gradually. It has suffered all along from having started at first with an insufficient equipment, and must still probably be regarded as incomplete. There is perhaps, however, considering all that it has so far done despite difficulties, the more hope that, in a new form and with better opportunities, it may produce more and better results hereafter.

As at present constituted the College aims at preparing students in Arts and Sciences for the degrees of the London University. The number of its students graduating in that University has not been in past years, and is not now, large, but there have almost always been a few students of good quality who have taken those degrees with honours. Thus it may be noted that at one time or other students of Firth College have taken honours in almost all, if not all, the subjects for which the London University gives honours. A few students have also proceeded to the older Universities, more especially to Cambridge, and won distinction there.

Not a few former students of the College have obtained important positions as lecturers, teachers, or inspectors. Many have gone into manufacturing businesses, works, mines, &c.; a few have taken Holy orders, a large number are practising medicine, others are solicitors. A certain number have come back and done good service as lecturers in Firth College itself; but again as regards distinctions it must be recollected that the College is, as has been well said, not really as old as its age, its effective life having lasted perhaps not much more than ten years. Of former members of the staff several have been preferred to posts of distinction in other Universities and Colleges, or have made valuable contributions to learning and science.

To come to the work actually being done in the College:—The number of pupils in the more advanced classes on the Arts side is so small that the teaching often takes the form of personal and individual instruction rather than regular lecturing. This is not without advantage to the students, in so far as they enjoy the special attention and consideration of the Professors in a way which is not possible when the classes are larger. The specimens of such teaching which we witnessed in Greek, English, and History, were very good, and we can certainly say that the standard both of instruction and of attainment on the part of the students was very fairly high, and such as might be called academic. In French the standard was lower, but we were told that it was at present rather below than above the average mark. Here again, as at many of the University Colleges, the study of German does not seem to flourish as much as might be expected or desired.

The courses of lectures in Mathematics are arranged so as to take students through what is required for the examinations for the degrees B.A. and B.Sc. at the University of London, and there is besides a higher course beyond that range. The lectures appear to be good and stimulating, and though the classes, beyond the most elementary, are small, the number of students taking higher mathematics is proportionately large. About six are preparing for the Intermediate and three for the Final examination for B.A. or B.Sc., and three attend the higher course. Besides the day-classes there are

evening classes adapted to the wants of students preparing for London University examinations.

In Physics, in addition to courses which cover all that is required for the London Preliminary Scientific and B.Sc. examinations, there are more advanced courses in which the several branches of the subject are treated both mathematically and experimentally, and students can obtain at Firth College very good and complete instruction in this department of science. Moreover, there are students, though not a large number, who take advantage of the opportunity. A fair number are preparing for the Intermediate, and a small number for the Final, B.Sc. examination, and the proportion of them who obtain honours at these examinations is large. There are also usually two or three doing research work in conjunction with the professor or demonstrator. The classes in elementary Physics go through set courses of practical work in the laboratory as well as attend lectures, and the more advanced do selected pieces of experimental work. Medical students get their preliminary instruction in Physics along with the other students, and in future a like arrangement will be made for the engineering students. There are evening classes also both for lectures and laboratory work, and a Saturday class for teachers. Altogether the department is very efficiently conducted.

The general courses on Chemistry are arranged very much on the plan which is usual elsewhere, both as regards lectures and practical work; and there are several advanced courses in different branches of the subject. The elementary class is by no means a large one, and the advanced classes are decidedly small. There are, however, students besides those attending lectures who work in the laboratory, and some who are pursuing special branches of practical work. Three are preparing for the D.Sc. degree, and three engaged on original investigations, which, compared with the total number of students, seems a large number to be so engaged, especially when it is borne in mind that students who have completed their course of chemistry can readily meet with employment in the steel works. For the medical students special courses, theoretical and practical, are provided at Firth College. There are also evening courses suitable as preparation for the Intermediate Science examination of the University of London, and for the honour stage of the Science and Art Department. Altogether the number of classes is large, and it is creditable to the staff that, having their time so much taken up, they are able to show a list of researches published in recent years of considerable length.

The instruction in Biology at Firth College appears to be excellent, and is more complete than in some of the other colleges that we have visited. There is not only a good general course suited to students preparing for the London Intermediate examination for B.Sc., including Zoology, Embryology, and Botany, with corresponding practical work, but also advanced courses of Zoology and Botany suitable for those preparing for honours at the University of London. The number of students attending the latter courses is, no doubt, small, but the work done by them is good, and they are all preparing for University examinations. Many of them take two years in the laboratory, and there are several students working in the laboratory besides those attending the lectures. For medical students there is a special course of elementary Biology, and a course, not provided in some other colleges, in Comparative Anatomy and Embryology is arranged for those preparing for the Fellowship of the Royal College of Surgeons. Moreover, there are evening courses adapted to the wants of students preparing for the London Intermediate examination for B.Sc.

There is no course of lectures on Geology at Firth College at present, but the subject is taught at the Technical School, which is in course of re-amalgamation with the College, and it may be hoped that, when this process is complete, Geology will take its proper place in the College.

Physiology also is not taught in the College; but a course of lectures and practical work suitable for medical students in general, as well as a more advanced course of laboratory instruction, are given at the medical school by a very competent teacher, who, however, is wholly unpaid. None but medical students at present attend these courses, but were funds forthcoming to pay the lecturer, Physiology could easily be developed into an important part of the scientific instruction of the College.

There is a system of evening classes both for students in Arts and Sciences, and also for technical students. The number of students of the first kind is small, and the College does not appear very anxious to see it increase. The number of evening students in the technical school is much larger.

The College also carries on a Day Training College, but only admits a limited number of students, thinking it undesirable that the number of these students should bear more than a certain proportion to that of the general students of the College.

Further, it conducts a series of Extension lectures on subjects connected with Arts and Sciences, at centres in Sheffield, and also occasionally outside. The lectures in the city are free, the cost being defrayed by the Town Council of Sheffield. The series includes both single popular lectures and courses of lectures.

Very interesting and deserving of note, though not coming strictly within our purview, is the system of peripatetic lectures on Coal Mining, provided by the County Council of the West Riding.

Professorial Staff.

The staff in Arts and Sciences consists of the Principal, who is Professor of Physics, of Professors of Mathematics, Chemistry, Biology, English Language and Literature, Latin and Greek, Ancient and Modern History, and of Lecturers in Classics, French, German, Chemistry, Physiology, and Demonstrators and Assistant Lecturers, in Physics, in Chemistry, one of these belonging to the Coal Mining Department—and in Biology. In Chemistry there is further a Student Demonstrator. There is also a Professor of Coal Mining, Lecturers in the Theory and Practice of Teaching, and in Music; and the Technical School has an able staff of its own.

On the Arts side the staff is now perhaps sufficient for present purposes, though it has only just been made so by the addition of a separate Professor of English, and there are still important subjects, such as Philosophy, whether Moral, Metaphysical or Psychological, unrepresented.

On the Science side the whole number of Professors is small. It may be said that it is proportionate to the number of students, but much pains is taken to make the instruction thorough and complete, so that the number of classes is large and the teachers are very fully occupied. In Mathematics particularly, more especially if the College is to grow, more assistance seems needed. At present there is only one Professor, who has to do all the work at all stages, in both pure and applied Mathematics, single handed.

Both Professors and Lecturers and Demonstrators are technically appointed by the Council. In the case of Professors this is done upon the recommendation of the Executive Committee, in the case of Demonstrators upon the nomination of the Professors. The Council alone can dismiss in either case. The Professors receive as a rule a fixed stipend of 280*l.* and half the fees. There is a special endowment for the Chemical Chair but for no other. The stipends of the Professors are not large, in no case reaching such high totals as in many of the University Colleges; on the other hand, they are, perhaps, more equal than at any other College. The remuneration of the Lecturers, excepting in the case of the Assistant Lecturer in the Coal Mining Department, is somewhat low. The Demonstrators receive a fixed stipend of 120*l.*, which is about the usual rate, and also, by private arrangement, have a share in the fees of those classes which they teach.

Buildings.

In speaking of the buildings of the Firth College regard must be had not only to the block which the College now occupies, but also to the new premises which are on the eve of completion, and which it is hoped may be in use next term. The original buildings of the College were, as indicated above, erected without a definite conception of the future which lay before the College. They were intended to provide a hall and rooms for extension lectures rather than accommodation for a college with resident professors and continuous classes. Consequently, neither in size nor in arrangement were they sufficient for the latter purpose, and the College has suffered almost from the first from the want of better accommodation. An additional story has been added to the original building, which has given considerable extension of space. The premises which are now being erected close to the College will further provide much needed accommodation, more especially for the teaching of Arts and for the women students, but even when they are completed something will be left to be desired. The situation of the present building is central and convenient, but there is no room for expansion, and it does not appear possible to secure on the present site complete buildings under one roof. It is open to question whether it would not be better, instead of adding more buildings in the neighbourhood of the present College, to transfer the whole institution to a new site, where complete and continuous buildings

could be erected, and the possibility of such a move has been at times in the mind of the College. In the matter of buildings, as in other matters, it should always be remembered that the Firth College has in the past always cut its coat strictly according to its cloth, and kept rigidly out of any accumulation of debt. The premises of the Technical Department, situated a few minutes' walk from the College, seem on the whole very sufficient and well adapted for their purpose, and the premises of the medical school, which are close to the College, are excellent, being newly built and arranged specially for their purpose.

Laboratories.

Laboratories formed no part of the original plan of the College buildings, and consequently the rooms now used as such have the disadvantage of having been adapted, but not designed, for their present use. Their equipment also could be improved if funds were forthcoming for the purpose. These remarks do not apply to the department of Physiology, which has its home in the new building of the medical school; and indeed it must not be supposed that good work cannot be done in all the laboratories. The Physical laboratory is large enough and sufficiently equipped for ordinary students, and is fairly well supplied with electrical apparatus, but more rooms and more appliances are wanted for advanced work, as well as a larger allowance for maintenance. The Chemical laboratory appears to compare unfavourably with those of most of the other Colleges, because it was not built for the purpose, but in the two rooms of which it consists there is accommodation for 50 students. The Professor would, nevertheless, be glad of additional rooms and an increased allowance for current expenses, and a better departmental library. The Biological laboratories are well lighted and benched, and supplied with all reasonable facilities for work. There are two, a larger for the elementary, and a smaller for the advanced classes. There is a Botanic garden which does not, however, belong to the College, but supplies specimens and the opportunity of studying systematic botany. It may be said, with regard to laboratories and scientific appliances, that the College has made the most of the means at its disposal. The proposed amalgamation of Firth College with the Medical School and with the Technical School seems likely to awaken a wider interest in its work, and promises well for the development of its scientific side in the future.

Museum.

The College has no Museum proper of its own. There are, however, the beginnings of one in a zoological collection which the Professor is installing on very good lines, and which is already most valuable for educational purposes. Both funds and space, however, are wanted to make it what a college museum should be. There is a good public museum in the Weston Park, to which students can obtain access.

Library.

The College has no Library designed and arranged as such, but is gradually adapting and converting the large lecture hall of the original College to this purpose, for which it is not unsuitable, the upper end being used for reading, and books being placed at the sides. The College is, according to its means, generous to its library, which is better off than the libraries in several of the colleges we have seen, though still needing a good deal of development. Besides this general central library there are very useful collections of books in some of the Professors' departments or rooms. There is a large Free Public Library in the town, and the managers of it assist the College not a little by taking in expensive text-books asked for by the students. There is also the library of the Literary and Philosophical Society, which is very friendly and helpful to the College, more especially in arranging an interchange of periodicals, and there is further a good subscription library. There is too in the medical school an excellent medical library, placed in a fine room, to which the students have access.

Fees.

The fees at Sheffield are moderate, but could not, we were told, be raised without diminishing the number of students. As they are at present arranged it is rare for a student to be withdrawn through inability to pay them.

Duration of Course.

The average duration of a College course seems to be two years, but a very fair number of students remain for a third year. The length of the session is, for day students 32, and for evening students 21, weeks.

Students.

The students are drawn from all classes, the majority, however, belonging to what may be called the lower middle class. Many are very poor and could not come without scholarships. The bulk of the students are drawn from Sheffield, but many come in by rail from the surrounding country, more especially the West Riding, Derbyshire and Nottinghamshire, and from such towns as Chapeltown, Chesterfield, Retford, Gainsborough, Doncaster, Barnsley, Rotherham, and occasionally Macclesfield. There is no hall or hostel for students, but there are lodgings recognized by the College, more care being taken to supervise the lodgings of the women students than those of the men. The medical students at present are mostly drawn from, and live in, the neighbourhood. Most of the students come with some practical calling in view. In the case of the Arts and Science students this is generally that of teaching. Not a few are already teachers in elementary or secondary schools, some of the very best being teachers from the Grammar School, or from the Central higher school. The two chief boys' schools in the place, the Grammar School and the Wesley College, both supply a certain number of students to the College. A Methodist New Connexion College in the place sends a few students to evening classes.

The whole number of the students in Arts and Sciences has been and remains small. The number of day students declined somewhat last year, but the entry in the first term of the year 1896-7 points to a recovery. It should be remembered, moreover, that the Firth College is strict in only admitting students in the ordinary way over 17 years of age, and in limiting the number of its Training college students to a certain proportion of the whole number. Were it less strict in these two particulars it might doubtless show somewhat larger numbers. It should be noted too that the number of students taking regular courses is increasing.

We had evidence of the interest taken in the College by leading persons in the locality. The best indication, however, that it is generally appreciated is to be found in the response which has been made to an appeal for funds to extend and improve the College. About the year 1893 some 5,500*l.* was subscribed to add the new story. Since then an attempt has been made to raise some 35,000*l.* of further endowment, as already related, with a view to increasing both buildings and staff, and of this some 31,000*l.* has been already promised, and in part paid. It has been all the more difficult to raise money owing to the transitional state in which the College finds itself. There seems little doubt that if the amalgamation of the three branches of the College, and still more the federation of the new College so formed with the Colleges of the Victoria University, could be carried to a successful issue, generous local support would not be wanting to make the University College of Sheffield worthy of the town whose name it would bear. Our experience further leads us to believe that this last step, giving as it would to the College the advantage of degrees in close connexion with its teaching, would attract an increased number of good students.

T. H. W.
G. D. L.

(12.) UNIVERSITY COLLEGE, DUNDEE.

University College, Dundee, is the single example of a University College in Scotland. This is not unnatural. The whole population of Scotland is not large, smaller than that of London. Only four Scotch towns have more than 100,000 inhabitants, of these Dundee is the third largest. The other three, Edinburgh, Glasgow, and Aberdeen are each the seat of a Scottish University. Dundee was for many years alone among the great towns of Scotland in possessing no provision for education of the University kind, which Scotland has always prized so highly, and for which she has done so much. Here too, however, Scotch energy and liberality to education have not been wanting. Through the munificence of the foundress, the late Miss Baxter, of Balgavies, and her relatives, augmented by other handsome benefactions, the endowment of the Dundee

College approaches a total of a quarter of million of money, and there is reason to hope, that should the College prosper, the stream of liberality may yet continue to flow.

The Dundee College is now commencing its fourteenth session, and is therefore decidedly the youngest of the University Colleges proper. But its history, if short, has been unfortunately not uneventful. Dundee had originally no University of its own, but at a little distance, about three-quarters of an hour's journey by train, on the south side of the estuary of the Tay, in a secluded spot, is situated the little city of St. Andrews, the seat of the oldest, and certainly not the least interesting, but also the smallest, of Scottish Universities. The chief factor in the history of the Dundee College has been its relations with this academic neighbour. From the first, the idea of some common action and relation by which the degrees of St. Andrews should be available to students at Dundee was in various forms before the minds of many in both places. St. Andrews had a University but no population, Dundee a population but no University. One wanted students, the other degrees. Dundee College was founded about the beginning of 1881. In 1885, the Science degree of St. Andrews was thrown open to Dundee. Students at once began to matriculate at St. Andrews with the view of studying at Dundee for the degree, and the numbers of those so doing gradually and steadily rose.

In 1890 the Commissioners for the Scotch Universities issued an affiliating order, instituting a still closer connexion between the University and the College, by which all the classes at the Dundee College were recognised as qualifying for the degrees of St. Andrews. The result was a still more rapid rise, until the number of matriculated students at Dundee, which had been nine in 1886, became in the Session 1892–3 as many as 91. Unfortunately the discovery of a flaw in the instrument by which the union had been effected brought about its dissolution in 1895. The result was at once to arrest the growth of the Dundee College, and to reduce most seriously the number of its students. Thus, whereas there were in the Session 1892–93 some 200 day students, there were in the last session only 84, and, although the number of evening students has been better maintained, the whole numbers have fallen from over 300 to under 200 in the same period. There is, however, good reason to hope that the union with St. Andrews University may shortly be restored, and the relations of the new bodies placed on a better basis than before, and it is therefore fair to judge the College rather by the best it has done in the past, the potentiality it has already shown, and may be believed still to possess, and the promise it gives for the future, than merely by the number of students, the size of the classes, or the amount of work done, during the abnormal conditions of the last few years.

Should it regain its old position, the College would hope once more to prepare students for the degrees of the St. Andrews University. It would naturally be mainly a College of Science, but such provision would be made for teaching in Arts as would enable a student at any rate to qualify for the Ordinary Arts degrees. A very considerable opportunity seems to present itself to the Dundee College in connexion with Medicine. The Dundee Royal Infirmary contains 286 beds, and treats annually over 2,000 in-patients, drawn both from Dundee and from a wide area round. It is a flourishing institution, well managed, and fitted up with modern appliances, possessing in particular one of the best operating theatres in the country. Altogether, it is specially well suited to be the hospital of a scientific medical school, and with such a hospital, and the degrees of St. Andrews University open to them, the medical students of Dundee would be in a position which would compare favourably with that of the students of any provincial school. There is another institution, the Royal Asylum, near Dundee, which has an average of 400 resident patients, where also clinical instruction is given. Another opportunity which might be open to the College hereafter would be that of organising a faculty and school of Law leading up to legal degrees at St. Andrews. For some three sessions, 1890 to 1893, the Dundee College was able, by the generosity of a member of the council, to try the experiment of offering a course of lectures in law. The attendance was very good, numbering on an average over 50 students, but from want of funds the lectures had to be discontinued. There are, it may be noted, no lectures on law at St. Andrews.

We gathered that, while the unfortunate breach between the two bodies has been accompanied with a certain amount of difference between the Court of St. Andrews University and the friends of Dundee, the majority of the University Professoriate is not at all hostile to the College, but on the contrary is anxious to arrange a mode of co-operation. To us it would certainly appear that the more the two institutions can work

together the better. St. Andrews would seem to be the natural home of the Humanities, and all students who were able by residing there, if only for a part of their career, to come under the influence of its historic associations, with the charm and attraction of the situation and buildings of the oldest and most romantic of Scottish Universities, ought assuredly to benefit by so doing. Dundee, on the other hand, presents advantages for the study of medicine, law, engineering, and applied sciences, which no purely academic community can give. We hope, then, that the temporary breach may soon be healed, and that the University and College, once more united, may take a leading place among the great educational centres and forces of Scotland.

In the meantime, notwithstanding its difficulties and discouragements, the Dundee College has not been idle. Classes have been carried on, and every attempt has been made to do justice to those who presented themselves to learn. In such examinations as were open to them the students, both men and women, have acquitted themselves well. The professors, moreover, if their class-work has been lighter, have given themselves in many cases with the more energy to a department of University work, not less important than teaching, namely, research; and the whole result of the activity of the College has been, to say the least, very creditable. The number of contributions in particular to scientific publications, made by members of the staff in the Mathematical and Scientific departments, is very considerable, while the additions made by the late Principal to the literature of Latin scholarship deserve, at any rate, a word of mention.

At present the College lays itself out, among other things, to prepare students for the examinations of the University of London, and, in the case of women students, to prepare them also for the examinations open to women in the University of Oxford. It may be noted here that a former lady student of the College, after taking First Class Honours in Classics at Cambridge, has just been appointed Classical Tutor at Somerville College, Oxford, while another student in the last session won a scholarship at the same College.

There is, working side by side with the College, and indeed to some extent sharing its site and premises, though under independent management, the Technical Institute, founded by Sir David Baxter, a brother of the foundress of the College. This institute, while it has relieved the College of a good deal of elementary teaching, has also perhaps drawn away some students who would otherwise have gone to the College for a scientific training of a more than elementary character. The Institute and the College work harmoniously, but the former seems to meet the demand for education of the class who frequent it, and students of the Institute rarely seek the instruction of a university type which the College offers, or if they wish to graduate, they are attracted by the larger number of bursaries open to them at St. Andrews.

The lectures which we heard in Arts were of good type and quality, and we had evidence that the Professors acquaint themselves with, and endeavour to meet, the needs of individual students. At present, however, most of the Arts students are drawn off after a year's study by the bursaries at St. Andrews or the prospect of a degree there, or at Edinburgh, and the Professors at Dundee have therefore little opportunity of carrying on their teaching beyond the first stages. Under the circumstances the work done in Latin and Greek is very creditable, and we had evidence that an excellent standard is maintained in English, and, more particularly by the women students, in French and German.

In Mathematics the classes are organised to suit students preparing for examinations at the Scottish Universities, but, for reasons above given, the classes are very small, and at present there are only two students preparing to graduate. The Senior and the Honour classes were each attended last year by one pupil, of whose work the Professor speaks well. The College examination papers which we have seen indicate that the aim is to make the instruction of a University type.

In Physics the classes are all small, and even appear to be dwindling. Last year two advanced courses were given, on Thermo-dynamics and Sound, this year none. The elementary course is attended by twelve students, of whom about half do practical work in the laboratory. No students at present are doing advanced experimental work, though the Professor is an active investigator.

The elementary class in Chemistry numbers fifteen, of whom eight do practical work as well as attend the lectures. There is no advanced course of lectures, but five students are doing advanced practical work, and one graduate is engaged with the Professor and his Assistants in research, of which the results usually appear in the Journal of the Chemical Society of London. Beside the course above mentioned, there

is a technical course on dyeing, and the Assistants take the lectures on Chemistry for the Technical Institute, for which the College buildings are used.

In Natural History there is a good elementary course of lectures, and practical work in connection with it, but the class is very small, and there are no advanced students. There is a general course in Botany, with corresponding laboratory practice and field work, but the attendance is very small. A few do additional laboratory work. In Physiology there is one course of lectures, which is excellent in its way, and has a practical course connected with it. The class at present consists of only a few medical students, and there are no advanced students. The Professor occupies himself a good deal in research. A course on Anthropology attracts no attendance. In Geology instruction is not provided at the College.

The Staff.

The Staff comprises a Principal,—this office is, for the time being, vacant,—Professors of Mathematics, Physics, Chemistry, Engineering, Natural History, Botany, Physiology, Anatomy, and English Language and Literature; with Lecturers in Latin, Greek, French and German, and Assistant Lecturers and Demonstrators in Mathematics, Physics, Chemistry, Engineering, Natural History, Botany, Anatomy (vacant), and English Language and Literature.* There are also Lecturers in Medical subjects and a Teacher of Fine Art.

The Staff is a strong one, particularly on the Science side, containing teachers of high attainment and ability, and, more especially if working in concert with the Professoriate of St. Andrews, would be well able to produce results of the very best. It may be noted that even at present the Dundee Professor of English acts as University Lecturer at St. Andrews.

The remuneration derived from fees must of necessity at present be small, but the handsome endowment of the College enables it to offer emoluments for its chief Professors which compare favourably with those of much larger institutions in England, nor do the Professors generally make any complaint on this head. The Demonstrators, for the most part, appear also to be remunerated on a scale quite as high as that prevailing at most University Colleges. The Botanical Demonstrator has a stipend which is hardly more than nominal, and the assistant lecturers on Chemistry draw their stipends from the Technical Institute. The remuneration of the teachers of Modern Languages and Fine Art seem to be rather small.

Some addition to the staff would seem to be necessary if the College is to be fully equipped. The College pleads, and with force, that it ought to be able to provide all that is necessary for an Arts degree, and that to this end in particular a lectureship in Logic and Metaphysical and Moral Philosophy—subjects dear to the Scotch mind—should be provided. Some further help is also needed in the teaching of Classics, and the College is anxious to develop a Normal Training Department, analogous to those which have been established with success by some of the English University Colleges.

Buildings.

The Buildings, though not large, nor making any very great show, are very fairly commodious and well adapted for their purposes, and are very well situated for the convenience of students, and as regards health. There is a fair amount of room on the site for further extension. The best lecture rooms are very good, and there is a very fair provision of common rooms, and of private rooms for the professors.

The laboratories are fully equal to the requirements, and for the most part unusually well equipped. The exception to this statement is the Botanical Laboratory, which is not adequately provided with all that the Professor thinks necessary, especially in the way of books of reference. There is a Mechanical Laboratory, which is rather unusual, but which is considered by the Professor of Mathematics to be very useful for the illustration of his lectures.

There is a Zoological Museum of moderate size, with a growing typical collection, rich in specimens of Arctic invertebrata obtained from Dundee whaling ships. There is also a Botanic Garden.

* This assistant lectureship is at present filled by the Lecturer on Classics and Ancient History.

Library.

There is a very fair Library, containing somewhat over 9,000 volumes, upon which the College has spent some 2,400*l*. One of the privations to the College incidental to the severance from St. Andrews was the loss of the right of access to the fine University Library there, which for learned and scientific purposes was a boon much appreciated by the professors of the Dundee College.

Fees.

The fees are low, but they are arranged on the regular scale of the Scottish Universities and cannot therefore be altered.

Duration of Courses.

The length of the annual teaching session is for day students 32 and for evening students 21 weeks. The classes in the College are perfectly open, but in order to graduate, students must pass a preliminary examination, and subsequently take a course of study of not less than three academic years' duration.

The number of day students in the last session, 1895–6, was 84, of whom 28 were women, the number of evening students 99, of whom 17 were women. The day students were about 20 less than in either of the two preceding sessions, which decline is attributed to the withdrawal of the recognition of the Dundee classes as qualifying for the whole degree course at St. Andrews.

Students.

The students are, for the most part, drawn from Dundee and the immediate neighbourhood, but a certain number come some distance from the adjoining counties of Fifeshire, Forfarshire, and Perthshire, and in particular from such towns as Arbroath, Montrose, Perth, Tayport, Newport, and Cupar. The students are for the most part poor. Not a few, under the present circumstances, enter for and win, at the end of their first year, bursaries at St. Andrews, and go off to reside there. There would appear to be a want of bursaries to enable students to reside at Dundee. There is no residential College or Hostel, and the College undertakes no responsibility as regards the residence of students.

The best and most substantial proof that the College is well thought of in the neighbourhood is to be found in the pecuniary support which it has received. Thus the whole capital endowments of the College amount to 230,700*l*., and of this some 80,000*l*. has been added since the commencement of the year 1888–9.

Altogether the College at Dundee, in point of its buildings, endowment, and equipment, stands well in many ways; and, more especially as regards the pursuit of physical sciences, is well fitted to take high rank among the institutions in Scotland giving scientific instruction of a university type. Its weak point is the want of students. Here, however, it has been conclusively shown, by the history alike of the increase and decrease in the past, that union with the degree-giving body of St. Andrews may fairly be expected to bring greater numbers, and although the population of Dundee and its neighbourhood is not such probably as to support a very large college, yet in proportion to the population generally, and the other institutions of Scotland, it may claim to hold out the promise of doing work of good quality and adequate quantity, and of fully justifying its establishment as a centre of learning and education.

T. H. W.
G. D. L.

(13.) UNIVERSITY EXTENSION COLLEGE, READING.

The University Extension College, Reading, differs, as its name implies, from the university colleges pure and simple. It has the interest of being a new departure in the history of educational experiment. It is the result of the amalgamation of the local schools of Science and Art of Reading with the system and influences of the Oxford University Extension; an amalgamation rendered possible, and brought to a point, by the munificent action of Christ Church at Oxford in appropriating one of its

studentships to the Principal of Reading College. It is still a very young institution, having only been founded in 1892, and only incorporated in its present form in the summer of this present year, 1896. It is obvious then, that it must not be judged quite in the same way as older and more established institutions. Staff, buildings, appliances, the number of students, and even the curricula, are all at present in their first stage, and perhaps what should most be looked for are signs of vigorous growth, and the promise of future development. These are, in our opinion, not wanting.

The number of general students, with some fluctuations, has increased, but what is more important has been the increase in the number of regular students pursuing definite courses. After four years of existence the College has been able to incorporate itself, with a regular constitution, including representatives of the Reading Town Council, and the County Councils of Berkshire, Oxfordshire, Hampshire, and Dorset. It may thus be said already to constitute a centre for the Southern Midlands. It has further drawn to itself the British Dairy Institute, which was previously at Aylesbury. It has also, co-operating with the University of Oxford, organised a system of Diplomas in Agriculture, for which students are already working effectively. In this way it hopes to solve the difficult problem of the combination of Scientific teaching with actual practice in Agriculture.

The College is not old enough yet to have sent many distinguished *alumni* into the world, but a beginning has been made. One student has taken the B.Sc. degree of London, and been placed at the head of a Laboratory and Science school in South Wales, while a woman student has obtained a second class in the Final Honour School of Modern History at Oxford. Besides these a number of minor distinctions have been attained, chiefly in Science and Art. A beginning has been made, too, in the College, and this we consider highly important, of research work in Chemistry and Electricity, and also, it should be noted, in Agriculture; and already the College is becoming a centre of information and investigation for the region which it serves.

The amount of advanced work of a specifically university character, as distinct from technical and elementary studies, is at present not great, the number of students of any considerable attainment being very small, and the teaching, in consequence, being mainly of an elementary and preparatory kind. On the Arts side, the only work being done which is at all advanced would appear to be in History. In Languages the present standard would seem to be pretty much that required for the London University Matriculation.

Staff.

The staff consists at present, in the Department of Arts and Science, of the Principal, of Lecturers in Physics, Chemistry, Botany, and Zoology, with Teachers in Mathematics, and in Geography, and of Lecturers in Latin and Greek, History, French and Italian, and Music, with Assistants in subjects specially required for the Training of Teachers. The Agricultural Department and the Department of Fine Art have also their own staff.

As noted above, this staff ought hardly to be considered to represent the full development to which the College hopes to grow. For present purposes it is perhaps sufficient, or nearly so, though a teacher in German would appear to be already a desideratum, and should the College grow, the need would doubtless arise for somewhat more sub-division of subjects, and an increased number of teachers. As regards the *personnel* and quality of the staff, it may be noted that, thanks to the care and judgment of the Principal, and also in no small degree to its advantageous position midway between Oxford and London, the College has been able to secure the services of several very good teachers at a very moderate rate.

It should be borne in mind, moreover, that the system of University Extension Lectures is still made use of by the College to supplement the efforts of its regular and resident staff. Thus there are from time to time series of popular lectures, given by lecturers of the Oxford University Extension, under the auspices of the College, while members of the staff of the College give public lectures on subjects connected with their studies. There is an organised system of evening classes, for which the fees are very moderate. The College also sends out teachers from time to time into the surrounding counties.

The stipends of the lecturers are, as a rule, absolutely not large, but relatively to the numbers of the College they are generally very fair. The stipends in the Agricultural department are good and adequate, but in the Scientific and Literary department, and again in the Training College department, the teachers of some important subjects

cannot be said to be adequately remunerated. While in certain cases the whole time of the lecturer, or teacher, is at the command of the College if required, in not a few liberty is allowed to undertake other works in the way of extension lecturing or examining. Many of the lecturers too are young, and may fairly hope to benefit by the increase and development of the College hereafter, should it, as is to be hoped, prove successful. The plan adopted, as a rule, is to pay a fixed stipend, partly proportioned to the amount of time required of the teacher, though, in certain cases, the teachers take a share of the fees.

Buildings.

The buildings of Reading College are interesting and attractive. They are excellently situated, being continuous with the Town Hall, of which the public rooms are available for popular lectures, and close to the principal railway stations and to some of the best parts of modern Reading, while at the same time they are quiet, and not shut in by other structures. The College proper includes portions of some mediæval buildings, which at one time formed part of the famous Reading Abbey, and which it is pleasing to see once more appropriated to learned and collegiate uses. These premises are not large, but seem sufficient for their present purposes. The class rooms are small but well lighted; the Chemical and Biological Laboratories, and the Chemical Lecture Room seem well arranged. The new premises of the Dairy School, constructed expressly for their purpose, seem excellent, and are, we believe, a model in their way. The Physical Laboratory is small, and the apparatus simple, much of it being made by the Professor and his students for themselves, but this we consider to be no disadvantage. The site of the College affords room for some extension, should the College hereafter increase.

Library and Museum.

There is a quite small Library, but it can hardly be called adequate, as regards either the room or the collection of books, to be the library of an institution like Reading College, and there is certainly much need of development in this particular. There are at present no funds which can be appropriated to the Library, which depends entirely on donations, and there is no museum proper, and no funds at present available for one, but a collection of specimens for educational purposes has been commenced. There is in the town a good Public Library, and there is also the Silchester Museum. These are made use of by students, but cannot be said to supply the place of some better special provision at the College.

Fees.

The fees were fixed with the idea of meeting the County Council Scholarships, and also with the idea of making a reduction in favour of the contributing counties. They are distinctly low, but the College authorities are strongly of opinion that they could not at present be raised.

Duration of Course.

The ideal of the College at present for its regular higher students is that they should pursue courses extending over three years, that the male students should aim at the B.Sc. degree of London, or at scholarships in History at Oxford, and the women at honours in the History School at Oxford. As a matter of fact few students at present remain more than two years.

The session consists of three terms, Autumn, Winter, and Spring, each reckoning ten weeks.

Students.

Students to be admitted to day classes must be, as a rule, not under 16 years of age, and to be admitted to evening classes not under 15. In the last session, 1895–6, there were 670 registered students, registration meaning the payment of one shilling, and the entering of the student's name as taking one course, not a popular one. Of these registered students, 40 were below the regulation age, among them being certain County

Council scholars admitted upon the Scholarship examination, which may be assumed to be a sufficient test of attainment. There were also 25 students, who were not registered, as being under the age. Beside the registered students, there was an average of 1,270 at each lecture of the chief course of popular lectures, and of 50 at each lecture of a smaller course. Taking an average over the whole College, each student attends at least two courses of lectures. The full regular students of the College may be considered to be those who take courses involving regular *curricula* prescribed by the College and implying some four to five hours' work a day. Of these there are at present about 30 in the College, while there are some 10 more pursuing some kind of distinctly higher work, making in all about 40. Thus one of these is a research student, another is reading for the London B.Sc., others for the Intermediate Science or Arts Examinations at London, others again for the London Matriculation, or for the Agricultural Diplomas established by the College in conjunction with Oxford, or for the Dairy Teachers' Certificate. One woman student is reading for the Oxford History School, and three men are reading for History Scholarships at Oxford.

Of the regular students the majority at present are drawn from Reading, Caversham, and the counties of Berkshire, Oxfordshire, and Hants, but the Dairy School attracts Dairy teachers from distant parts, such as Lancashire, and even Scotland.

There is no hostel, or residence, but there is a system of registered lodgings for students coming to reside at Reading.

The College would appear to be regarded favourably by the municipality of Reading, and can also certainly claim to command the support of the surrounding counties. The best evidence of this is to be found in the grants from the Town Council of Reading, and from the several County Councils, and also in the handsome donations and subscriptions contributed by private persons in the town and neighbourhood.

It may be noted that there are, in connexion with the Reading College, as at the University Colleges elsewhere, a number of voluntary clubs and societies of a literary, scientific, social, and athletic character. On the value of such societies we have dwelt elsewhere. One of those at Reading, the French Literary and Debating Club, calls for remark as being, we understand, particularly active and successful. The College also publishes a magazine of considerable literary merit.

Our attention was also directed to the claim of the Reading College to be the only College which at present attempts the systematic teaching of "Pupil Teachers."*

Altogether while, if we are for the purposes of this report to leave on one side the excellent technical work, more particularly in Agriculture, which Reading College is doing, and for which it receives grants from public funds available for such purposes in the hands of the County Councils, we do not think that the work of a university kind done by the College is as yet of sufficient bulk to justify us in recommending the College for any grant at present, we still feel clear that, in the four years of its history the College has amply justified its existence, and we would strongly recommend that its claims for aid should again be taken into consideration at no distant date, upon the completion, it might be suggested, of the first decade of its life, or at the next revision of the apportionment of any grant now made.

T. H. W.
G. D. L.

THE TECHNICAL AND UNIVERSITY EXTENSION COLLEGE, EXETER.

The Exeter Technical and University Extension College, was founded in its present form in the summer of 1893, and has therefore barely completed three years of life. It combines, however, in a new form, various elements, some of which are of older standing. A school of Art and a school of Science had existed in Exeter for some thirty years. The City possessed in the Albert Memorial Museum, to which is united the Free City Library, premises well suited, subject to some addition, to the purposes of a University College. University Extension lectures had been carried on with much success in Exeter for some years. When, therefore, the municipality found itself, under the Customs and Excise Act of 1890, in possession of rather over 1,000*l.* per annum—a sum equivalent to a halfpenny rate—available for technical education, and was desirous of applying the money to establishing a technical institute, the idea of

* It is fair to say that we found a certain number of Pupil Teachers attending classes at Exeter.

bringing these various factors into systematic relation found favour, and the result was the present College.

The experiment, however, is still a new one, and the College must be judged more by its possibilities than by its actual performance. It is still rather an aggregate of three separate elements, a Technical Department, a University Extension Department, and a Training Department, than a University College proper. Good work is being done in each of these departments, and every attempt is made to raise the standard of teaching in each and all of them. But neither the number nor the quality of the students at present admits of much advanced study being attempted, and, while some of the teaching may be said to be of University type, of higher University work there is at present none.

Probably the most valuable part of the work of the College at present, certainly that in which it appears most active, is to be found in its Evening classes. Among these should be noted particularly the classes for pupil teachers, and the pharmaceutical classes which aim at enabling students to pass, at any rate their first, pharmaceutical examination, from the College.

The desire of the College is to be able to organise some kind of complete curriculum, which should be recognised perhaps by certificates to be awarded by Cambridge University.

Staff.

The Staff cannot at present be called strong or complete. Several of the teachers, among them the Principal, are obliged to undertake a number of subjects, and even so it is found impossible to cover the whole field of Arts and Sciences as usually interpreted.* Thus the College aims at preparing candidates for the London University Matriculation, and in some cases for the Intermediate Examinations of that University, but does not profess to be able to carry students up to a degree. It also prepares students for the Higher Local Examinations of Cambridge, and a great deal of work is done for the South Kensington Science and Art Examinations, including the Senior stage, of which the standard is fairly high. Beside this, there is the Training Department providing both certificate classes and special classes for pupil teachers. Considerable use also is still made of the Extension Lectures of the University of Cambridge.

The staff includes the Principal, who teaches several subjects, namely, Mechanics, Physics, and Geology, a teacher in French, who also undertakes German and Italian, a teacher in Latin and Mathematics, a teacher, a lady, in English and Anglo-Saxon, a teacher, also a lady, in English History and Geography, a teacher in History, Geography, Physiography and Physiology, and two teachers in Chemistry, of whom one also teaches Botany, and a second teacher in Physics. There are also teachers who conduct the Technical Classes and the School of Art.

The scale of remuneration of the members of the staff is very low, the emoluments being in no cases at all large, and in some little more than nominal. But it must be understood that in very few cases do the teachers give the whole of their time to the College, and the present arrangements, in this as in other matters, must be regarded as of a tentative or provisional character.

Buildings.

The College has, as indicated above, the advantage of making use of the buildings of the Albert Memorial Museum. These are good buildings, excellently situated, and, so far as they go, very well suited for the purposes of the College. They contain a Museum proper, which is a very fair one, and of great use to both teachers and students, and a free public Library to which the students have access, both for reading and reference, as well as a small Art gallery. Added to these are the College premises. The rooms contained in these are good, but the number is insufficient, and in consequence several subjects have to be accommodated in the same room, an arrangement often very inconvenient. The College is very anxious to be able to provide some additional class rooms so as to remove this difficulty. There is also much need of, at any rate, one common room for the staff, and another for the students, who have at present no place to go to between their lectures. The College also stands much in want of a special Library of its own, neither the Free Library nor the subscription libraries which are to be found in the city quite taking the place of such a provision.

The arrangement and provisions of the Art School are excellent.

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* Note.—Greek is not at present taught in the College, there being no demand for it.

Fees.

The fees are, in the University Extension Department, one guinea a term for each subject in the day classes, and 10*s.* 6*d.* a term, or one guinea a year, for each subject in the evening classes, half fees being allowed for teachers or scholars in elementary schools.

Duration of Course.

There are three terms in the year. These are somewhat unusually arranged, the Lent term including some 15 weeks with a week's interval at Easter, the Summer term some six weeks in June and July, and the Michaelmas term rather more than two months. The bulk of the work appears to be done in the Michaelmas and Lent terms.

Students.

The total number of students attending courses in Arts or Science in the year 1895–96 was 324. Of these 40 were men and 284 women. The number of individual students attending the day classes, exclusive of Training College students, was 91.

In giving these numbers, however, it should be said that it is impossible so to classify the students as to institute any comparison with the numbers preparing for degrees or attending regular courses at the University College proper.

The students are drawn mainly from Exeter and its suburbs, but a certain number come in from the surrounding country and neighbouring towns. Those who attend the evening classes are mostly persons engaged in earning their livelihood during the day, and are of limited means. Almost all of these, as is to be expected, attend the College with some practical end in view. Among the day students are to be found, especially among the women students, not a few of higher social standing.

With regard to the interest in the College shown by the neighbourhood, it should be noted that the Council of the City of Exeter have not only from the first devoted the whole of the sum available under the Customs and Excise Act, amounting to over 1,000*l.* per annum, to the Technical Department, but also made a direct contribution of 110*l.* a year for the other purposes of the College. They further, when erecting the additional buildings needed for the College, considerably augmented the bequest of 6,000*l.* left by Mr. Kent Kingdon for that object. We were informed during our visit that the Municipality is anxious to encourage and support the College, and these are certainly substantial tokens of such a desire.

Taking the College altogether we should say that, according to its means, it is certainly doing good work, and that there is very fair promise of greater achievement and results being attained with increased development.

The population in and around Exeter is not large, but the City is an important historic, geographical, and social centre, and it would seem that there is need for the kind of education which the College aims at supplying.

The Exeter College, then, must be pronounced a very interesting, useful and, as we trust, hopeful experiment. It is still, however, only in the experimental stage. Time alone can show whether the experiment will prove successful and whether the College can hereafter come forward and ask to be recognised as deserving of assistance as a fully equipped and established institution.

But that the attempt made to organise and utilise existing elements and opportunities is a praiseworthy one there can be no doubt, and not a little credit is due to those, whether on the spot or at Cambridge, who saw the possibility and who are labouring with such generous devotion and assiduity to make it a reality.

T. H. W.
G. D. L.

APPENDIX A.

This Table is intended to show the comparative expense, at the several Colleges, of corresponding Courses of Instruction. Inasmuch as the Courses do not always correspond in all respects, comparisons founded on this Table can only be regarded as approximations. The fee is for a course of three hours per week for three terms, unless otherwise indicated. (1) indicates one hour a week, (2) two hours a week, and so on. † signifies one term, ‡ two terms.

College and Entrance Fee.	Greek or Latin.	English.	French or German.	History.	Mathematics.	Physics.	Physical Laboratory.	Chemistry.	Chemical Laboratory.	Botany or Zoology.	Botanical or Zoological Laboratory.	Physiology.	Physiological Laboratory.	Composition, or Average, Fees, Annual.	
														Arts.	Science.
	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.	Fee. £ s. d.
University College, London -	6 6 0 †2 12 6	(2) 5 5 0 †(2) 2 2 0	6 6 0 †2 12 6	(4) 5 5 0	8 8 0 †3 3 0	(6)10 10 0 (4) 7 7 0 †(6) 4 4 0 †(4) 3 3 0	(5)15 15 0	(4) 7 7 0 †4 4 0	(18)15 15 0	4 4 0 or 6 6 0	8 8 0 †3 3 0	‡7 7 0	‡(1) 5 5 0	33 2 6	47 5 0
King's College, London - 4*l.* 15*s.* 6*d.*	(6) 5 5 0 †(6) 2 2 0	(2) 5 5 0 †(2) 2 2 0	(2) 5 5 0 †(2) 2 2 0	(2) 5 5 †(2) 2 2 0	(5)10 10 0 †(5) 4 4 0	(5)10 10 0 †(4) 4 4 0	(15)21 0 0 †(6) 4 4 0	(2) 8 8 0 †3 3 0	(15)15 15 0 †(15) 6 6 0	‡(5) 5 5 0 (Botany)	†(18) 5 5 0 (Botany)	‡8 8 0	‡(2) 5 5 0	44 2 0	56 14 0
Bedford College, London -	6 6 0 † 2 12 6	6 6 0 †2 12 6	(2) 6 6 0 †2 12 6	(1) 3 13 6 †(1) 1 11 6	8 18 6 †3 13 6	6 16 6 †3 13 6	7 17 6 †2 12 6	5 5 0 †2 12 6	†(9) 5 5 0 †(9) 3 13 6	5 5 0 †2 12 0	(6) 5 5 0 †(6) 2 12 6	(2) 5 5 0 †2 12 6	(6) 5 5 0 †(6) 2 12 6	31 10 0	46 4 0
The Owens College, Manchester 1*l.* 1*s.*	(4) 4 4 0	3 10 0 ‡2 12 6	3 10 0	(2) 2 12 6	3 10 0	3 10 0	(12) 7 7 0	‡3 10 0	(18)13 13 0	‡2 12 6 (Zoology) 3 3 0 (Botany)	‡(12) 7 7 0 (Zoology) (6) 6 6 0 (Botany)	‡(5) 5 5 0	‡(6) 4 4 0	16 16 0	20 0 0
University College, Liverpool - 1*l.* 15*s.* annually.	4 0 0 †2 0 0	‡3 0 0	4 0 0 †2 0 0	(2) 3 0 0 †(2) 1 7 6	4 0 0 †2 0 0	4 0 0 †2 0 0	(18)10 0 0 †(18) 5 0 0	4 0 0 †2 0 0	(18)12 0 0	4 0 0 ‡3 0 0	†2 10 0 (Zoology) ‡6 0 0 (Botany)	(4) 5 5 0	†(6) 2 0 0	—	—
Yorkshire College, Leeds - 1*l.* 1*s.*	3 13 6	2 12 6	3 13 6	3 13 6	3 13 6	3 13 6	(18)13 3 0	3 13 6	(18)13 13 0	5 5 0	(18)13 13 0	8 8 0	(18)10 10 0	17 0 0	27 0 0

University College, Bristol - 1*l.* 1*s.*	5 5 0 †3 3 0	5 5 0 †3 3 0	5 5 0 †3 3 0	5 5 0 †3 3 0	(5) 5 5 0 †(5) 3 3 0	5 5 0 †3 3 0	(18)10 10 0 †(18) 4 14 6	5 5 0 †3 3 0	(18)10 10 0 †(18) 4 14 6	(5) 5 5 0 †(5) 3 3 0	(18)10 10 0 †(18) 4 14 6	‡5 5 0 and tutorial fee, 3*l.* 3*s.*	8 8 0 (practical course)	15 15 0	25 14 0
Mason College, Birmingham - 1*l.* 1*s.*	3 13 6	(2) 2 12 6	3 13 6 †1 11 6	4 4 0	4 4 0 †1 11 6	(5) 5 15 6	(3) 3 3 0 (18) 8 8 0	(4) 6 16 6 †2 12 6	(18)12 12 0 †(18) 4 14 6	6 6 0 (Zoology) 5 15 6 (Botany)	†2 12 6	6 6 0	(35) 5 5 0 †2 2 0	—	—
Firth College, Sheffield - - 2*s.* 6*d.*	(2) 2 12 6 †(2) 1 1 0	(2) 2 12 6 †(2) 1 1 0	(2) 2 12 6	(2) 2 12 6 †(2) 1 1 0	(2) 2 12 6	(2) 2 12 6 †(2) 1 1 0	(6) 5 0 0 †(2) 1 1 0	(2) 2 12 6	(6) 5 5 0 †(6) 2 0 0	‡2 2 0 (Zoology) †1 1 0 (Botany)	(6) 5 5 0 †(6) 2 2 0	‡4 4 0	‡(3) 2 2 0	14 12 0	23 0 0
University College, Nottingham	3 0 0 †1 0 0	(1) 0 15 0	3 0 0 †1 0 0	(1) 0 15 0	2 5 0 †(2) 0 15 0	2 5 0 †(2) 0 15 0	†(6) 1 5 0 †(3) 0 15 0	3 3 0	†(6) 2 0 0	(1) 1 1 0	(1) 2 5 0	(2) 2 5 0 †(2) 0 15 0	(2) 3 3 0 †(2) 1 1 0	12 0 0	18 0 0
Durham College of Science, Newcastle. 1*l.* 1*s.* annually.	3 10 0 †1 10 0	(2) 3 10 0 †1 10 0	3 10 0 †1 10 0	(2) 3 10 0 †1 10 0	(5) 7 0 0 †(5) 3 0 0	3 10 0 †1 10 0	(18) 9 0 0 †(18) 3 10 0	3 10 0 †1 10 0	(18) 9 0 0 †(18) 3 10 0	3 10 0 †1 10 0	(9) 3 10 0 †(9) 1 10 0	—	—	16 0 0	17 6 8
Extension College, Reading - 1*s.*	(2) 2 0 0	(2) 2 0 0	(2) 2 0 0	(10) 12 0 0	4 0 0	(1) 2 0 0	(4) 4 0 0	(2) 3 0 0	(5) 6 0 0	(1) 2 0 0	(2) 2 0 0	(1) 1 10 0	—	14 0 0	18 0 0
University College, Dundee -	‡3 3 0	(6) 3 3 0	(2) 2 2 0	—	‡(6) 3 3 0	(6) 3 3 0	(6) 3 3 0	(6) 3 3 0	(6) 3 3 0	3 3 0 (Nat. Hist.) (6) 3 3 0 (Botany)	3 3 0 †1 11 6 2 2 0	(5) 3 3 0	5 5 0	—	—

APPENDIX B.

TABLE showing the NUMBERS of DAY STUDENTS, exclusive of Medical STUDENTS, at the UNIVERSITY COLLEGES for FIVE ACADEMIC YEARS last past; also the NUMBERS of TRAINING COLLEGE STUDENTS, of EVENING STUDENTS, of those preparing for UNIVERSITY EXAMINATIONS in ARTS, SCIENCE, and LAW, and of GRADUATIONS in ARTS, SCIENCE, and LAW for the same period. Where no figures appear the number has not been ascertained.

College.	Academic Year, 1891–92.					Academic Year, 1892–93.					Academic Year, 1893–94.					Academic Year, 1894–95.					Academic Year, 1895–96.				
	Day Students, excluding Medical Students, but including Training College Students. A.	Evening Students. B.	Training College Students. C.	Students preparing for University Examinations in Arts, Science, and Law. D.	Graduations in Arts, Science, and Law. E.	Day Students, excluding Medical Students, but including Training College Students. A.	Evening Students. B.	Training College Students. C.	Students preparing for University Examinations in Arts, Science, and Law. D.	Graduations in Arts, Science, and Law. E.	Day Students, excluding Medical Students, but including Training College Students. A.	Evening Students. B.	Training College Students. C.	Students preparing for University Examinations in Arts, Science, and Law. D.	Graduations in Arts, Science, and Law. E.	Day Students, excluding Medical Students, but including Training College Students. A.	Evening Students. B.	Training College Students. C.	Students preparing for University Examinations in Arts, Science, and Law. D.	Graduations in Arts, Science, and Law. E.	Day Students, excluding Medical Students, but including Training College Students. A.	Evening Students. B.	Training College Students. C.	Students preparing for University Examinations in Arts, Science, and Law. D.	Graduations in Arts, Science, and Law. E.
The Owens College, Manchester -	558	395	49	369	45	634	320	58	416	74	635	362	64	432	87	592	329	57	491	96	670	344	56	405	96
University College, London -	558	—	—	—	23	770	—	—	—	34	868	—	28	—	41	750	—	20	—	24	747	—	0	—	?
University College, Liverpool -	276	1,227	13	126	25	370	1,703	20	141	24	383	1,582	22	135	34	395	1,043	30	157	24	432	1,111	34	200	40
The Yorkshire College, Leeds -	422	457	7	—	6	461	440	21	127	14	495	411	25	100	13	489	399	27	156	21	501	402	24	188	25
King's College, London (*for the calendar years*) { Men -	369	353	50	Uncertain.		338	617	50	Uncertain.		338	460	49	Uncertain.		318	484	46	Uncertain.		284	305	?	Uncertain.	
{ Women	426	—	—			430	—	—			384	—	—			358	—	—			315	—			
Total -	795	353	50	—	—	768	617	50	—	—	722	460	49	—	—	676	484	46	—	—	599	305	—	—	—
Mason College, Birmingham -	515	426	80	104	9	409	291	80	—	17	404	272	87	87	11	461	283	90	86	15	500	412	92	79	9
The Durham College of Science -	481	1,683	50	53	10A.Sc	482	1,440	63	77	7 & 12A.Sc	489	850	81	86	3 & 10A.Sc	463	908	88	114	9 & 16A.Sc	499	1,092	104	133	16 & 18A.Sc
University College, Bristol - -	189	280	—	42	5	225	293	30	45	4	229	261	60	42	5	226	238	60	46	4	213	220	60	44	6
University College, Nottingham -	421	1,502	60	35	3	431	1,329	64	47	6	442	1,439	81	Uncertain.	4	453	1,353	93	Uncertain.	6	456	1,385½	103	Uncertain.	3
The Firth College, Sheffield -	103	136	32	60	1	158	103	34	77	1	209	114	30	88	4	209	116	34	87	4	183	117	27	78	4
Bedford College, London - -	123	0	0	39	13	121	0	5	39	8	144	—	7	83	11	174	14	11	94	12	176	12	5	119	12
University College, Dundee -	—	—	—	—	—	—	—	—	—	—	107	—	—	—	—	104	81	—	—	—	84	99	—	—	—
University Extension College, Reading	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40	—	—	—	—

II.—FINANCIAL REPORT BY Mr. CHALMERS.

Treasury Chambers, S.W.,
31st December 1896.

May it please Your Lordships,

In obedience to the instructions contained in the Treasury Minute of 3rd March 1896, I have visited the 14 Colleges therein specified, and submit the results of my inquiries into their financial position.

Before proceeding to report on the five specific questions referred to me, I may indicate the general nature of my inquiries, in explanation of the financial table on the following page. The Parliamentary grant being an annual subscription specifically voted "in aid of certain Colleges in Great Britain giving education of a University standard in Arts and Science," my chief object has been to ascertain from audited accounts the annual income and expenditure of the several Colleges (classified under the same heads) in respect of Arts and Science alone. Inasmuch as nearly all the Colleges combine with Arts and Science technical instruction and medical education, it is not easy to distinguish the items, and considerable difficulty arises in connexion with the proportion of administrative and general expenditure which should properly be allotted to Arts and Science. Herein I have been guided by the same principles in dealing with each College, and I believe that the results properly compare in each case with those of the other Colleges under the same heads.

It will be observed that the figures of income and expenditure shown in the following table relate to 1895–96 only (1896 in the case of King's College, London). I have also investigated the figures of 1894–95; but, as exceptional circumstances affecting several Colleges in that year made it impossible to institute a just financial comparison for 1894–95 without complicated adjustments, I do not trouble Your Lordships with the figures. In my opinion, it is adequate to consider the figures of 1895–96 by themselves, not only because they give the latest information available, but also because they are of a normal character and admit of a financial comparison of College with College.

I have shown, with separate totals, the 11 Colleges which share at present in the Parliamentary grant of 15,000*l*. Dundee has been separately treated; and the two Extension Colleges at Reading and Exeter have never received a Parliamentary grant through the Treasury.

In order to complete, as far as possible, the information relating to the finances of the Colleges, I have added, in a separate column, figures of capital expenditure on buildings and plant from the foundation of each College to the present time. These figures are not all of equal value, as the records are not complete in certain cases, while in others the practice has been to charge to income account what is elsewhere charged to capital. On the whole, these figures understate rather than overstate the capital outlay, which in its turn must be considerably less than the present value.

Throughout I have confined myself to the comparative method in dealing with the heads of reference. The only financial standard which can be established for comparing the Colleges one with another is the average standard deduced from the working of all combined.

I may here acknowledge the ready and unstinted assistance accorded me in every case by the registrars and secretaries of the several Colleges. Without such assistance reliable figures could scarcely have been ascertained for any one College, and no financial comparison could have been instituted between the Colleges as a whole.

To the Lords Commissioners
of Her Majesty's Treasury.

Name.	ARTS AND SCIENCE, 1895-96.													Result of the Year's working of the College as a Whole, 1895-96.		Total Capital Expenditure.	Name.
	Income.							Expenditure.									
	Fees, &c.	Income from Endowments.	Subscriptions.	For Scholarships.	Treasury Grant.	Deficit.	Total.	Teaching Staff.	Administration, &c.	Total Interest on Loans.	Scholarships.	Surplus.	Total.	Surplus.	Deficit.		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	
The Owens College, Manchester	13,442	12,276	4,095	2,488	1,920	2,074	36,295	19,678	12,765	1,128	2,724	—	36,295	120	—	348,702	The Owens College, Manchester.
University College, London	8,259	5,907	968	996	1,812	361	18,323	10,364	6,414	549	996	—	18,323	—	2,421	400,000	University College, London.
King's College, London	8,079	344	1,654	666	1,275	1,268	13,286	7,663	3,947	1,010	666	—	13,286	—	(?) 3,500	220,970	King's College, London.
University College, Liverpool	6,094	5,565	1,857	474	1,601	794	16,385	10,722	5,185	4	474	—	16,385	—	983	152,745	University College, Liverpool.
Mason College, Birmingham	5,342	4,459	250	667	1,462	1,104	13,284	7,133	4,890	594	667	—	13,284	—	1,500	106,000	Mason College, Birmingham.
Yorkshire College, Leeds	6,126	1,099	722	661	1,494	2,769	12,871	8,574	2,493	1,050	754	—	12,871	—	2,223	190,000	Yorkshire College, Leeds.
University College, Nottingham	2,396	400	3,225	353	1,310	448	8,132	4,762	3,017	—	353	—	8,132	—	601	90,257	University College, Nottingham.
University College, Bristol	2,713	75	716	138	1,255	810	5,707	3,485	1,902	218	152	—	5,707	—	1,283	34,449	University College, Bristol.
Durham College of Science	5,320	1,470	1,700	181	1,282	428	10,381	6,096	2,327	1,427	529	—	10,381	—	27	72,365	Durham College of Science.
Firth College, Sheffield	1,503	1,039	1,393	171	1,310	19	5,435	3,679	1,550	—	206	—	5,435	33	—	28,966	Firth College, Sheffield.
Bedford College, London	4,836	36	501	467	749	—	6,589	3,656	1,898	—	421	613	6,589	568	—	23,137	Bedford College, London.
Total (11 Colleges) - £	64,110	32,670	17,101	7,262	15,470	10,075	146,688	85,764	46,388	5,980	7,943	613	146,688	721	12,538	1,667,591	
University College, Dundee	460	4,288	75	95	500	373	5,791	3,369	1,880	372	170	—	5,791	—	458	66,799	University College, Dundee.
University Extension College, Reading	528	—	1,490	—	—	370	2,388	1,554	834	—	—	—	2,388	—	881	11,602	University Extension College, Reading.
University Extension College, Exeter	204	4	396	—	—	16	620	482	133	—	5	—	620	38	—	10,000	University Extension College, Exeter.
Total (14 Colleges) - £	65,302	36,962	19,062	7,357	15,970	10,834	155,487	91,169	49,235	6,352	8,118	613	155,487	759	13,877	1,755,992	

In the light of the figures in the foregoing table I proceed to consider the five heads of Your Lordships' reference.

1. The income of each College from all sources, including the amount of pecuniary support given, whether by private subscriptions or out of local funds.

The income of a College is derived from what it earns by students' fees, and what it receives (*a*) from annual subscriptions or (*b*) from its invested endowments (including those endowments earmarked to scholarships). Columns 2–5 give the heads of local income; the total income is made up by adding the Parliamentary grant received within the year 1895–96, shown separately in column 6. In 1895–96, however, the Parliamentary grant was in part divided otherwise than on the existing proportions, so that the total actually brought to account exceeded the Parliamentary grant, whether at the 1895–96 rate of 15,000*l.* or at the 1896–97 rate of 15,500*l.* (which included 500*l.* for the University College, Dundee). The local and total income of each College stood as shown hereunder, the order being that indicated by local income.

No.	Name.	Income, 1895–96.	
		Local only.	Total.
		£	£
1	The Owens College, Manchester -	32,301	34,221
2	University College, London - -	16,150	17,962
3	University College, Liverpool - -	13,990	15,591
4	King's College, London - -	10,743	12,018
5	Mason College, Birmingham -	10,718	12,180
6	Durham College of Science - -	8,671	9,953
7	Yorkshire College, Leeds - -	8,608	10,102
8	University College, Nottingham -	6,374	7,684
9	Bedford College, London - -	5,840	6,589
10	University College, Dundee - -	4,918	5,418
11	Firth College, Sheffield - - -	4,106	5,416
12	University College, Bristol - -	3,642	4,897
13	University Extension College, Reading	2,018	2,018
14	University Extension College, Exeter	604	604
	Total (14 Colleges) - £	128,683	144,653

To these figures of local income I shall recur in considering the fifth head of reference.

2. The amount by which the Income in each case falls short of the necessary expenditure.

The amount by which the income for Arts and Science falls short of the actual expenditure in 1895–96 is shown in column 7; in the sole case of Bedford College, London,* was there a surplus, amounting (as shown in column 13) to 613*l.* But, if the working of each College as a whole be taken into account, a surplus is also shown by the Owens College, Manchester, by Firth College, Sheffield, and by the University Extension College, Exeter, while the deficiency is reduced in the case of the Yorkshire College, Leeds, and the Durham College of Science. On the whole, however, the total deficiency on the year is somewhat larger for the Colleges' work as a whole than for their work in Arts and Science alone—the (net) deficiency on the first 11 Colleges being increased from 9,462*l.* to 11,817*l.*, and the (net) deficiency on all 14 Colleges being increased from 10,221*l.* to 13,118*l.* Thus, it will be seen that, even with the help of the Parliamentary grant, Arts and Science entail nearly the whole of the total deficit on the Colleges collectively.

* Fees were reduced and salaries increased when the Parliamentary grant was first received in 1894–95; and it is explained that "during the session of 1895–96 the numbers of the students at Bedford College, "London, increased so suddenly that the extra receipts from fees amounted to one-quarter of the receipts, "namely 1,100*l.* Although the Council had looked for some additional income from this source, this amount "was more than they could have felt themselves justified in calculating upon beforehand. This practically "accounts for the surplus."

The following table shows the Colleges in the order indicated by their surplus of deficit on actual expenditure on Arts and Science in the year 1895–96 :—

No.	Name.	Arts and Science only.		College as a Whole.	
		Surplus.	Deficit.	Surplus.	Deficit.
		£	£	£	£
1	Bedford College, London	613	—	568	—
2	University Extension College, Exeter	—	16	38	—
3	Firth College, Sheffield	—	19	33	—
4	University College, London	—	361	—	2,421
5	University Extension College, Reading	—	370	—	881
6	University College, Dundee	—	373	—	458
7	Durham College of Science	—	428	—	27
8	University College, Nottingham	—	448	—	601
9	University College, Liverpool	—	794	—	983
10	University College, Bristol	—	810	—	1,283
11	Mason College, Birmingham	—	1,104	—	1,500
12	King's College, London	—	1,268	—	(?) 3,500
13	The Owens College, Manchester	—	2,074	120	—
14	Yorkshire College, Leeds	—	2,769	—	2,223
	Total (14 Colleges) £	613	10,834	759	13,877
			613		759
	Net deficiency (14 Colleges) £		10,221		13,118

If the Colleges at Dundee, Reading, and Exeter be omitted, the net deficiency on the 11 Colleges which share in the Parliamentary grant of 15,000*l.*, amounts to 9,462*l.* in respect of Arts and Science alone and to 11,817*l.* in respect of their whole working.

An important item in the composition of the deficit is the interest payable by nine out of the 14 Colleges in respect of loans. In the main, this charge in the annual account arises from capital outlay on buildings, &c., for which the necessary funds had not been subscribed, and for which, therefore, temporary provision has been made by borrowing; in part, however, the indebtedness represents accumulated deficits on past years' working. It may be held that the Parliamentary grant is given to the Colleges to enable them to carry on their educational work within the year and does not take cognisance either of past deficiencies of income or of outstanding bills on capital account.* If, in accordance with this view, the item of interest on all loans be omitted from consideration in estimating the current deficiency, then the Colleges will stand as follows in respect of net surplus or net deficit on actual expenditure on Arts and Science in the year 1895–96 :—

No.	Name.	Arts and Science only.		Work as a Whole.	
		Surplus.	Deficit.	Surplus.	Deficit.
		£	£	£	£
1	Durham College of Science	999	—	1,400	—
2	Bedford College, London	613	—	568	—
3	University College, London	188	—	—	1,872
4	University College, Dundee	—	1	—	86
5	University Extension College, Exeter	—	16	38	—
6	Firth College, Sheffield	—	19	33	—
7	King's College, London	—	258	—	(?) 2,490
8	University Extension College, Reading	—	370	—	881
9	University College, Nottingham	—	448	—	601
10	Mason College, Birmingham	—	510	—	906
11	University College, Bristol	—	592	—	1,065
12	University College, Liverpool	—	790	—	979
13	The Owens College, Manchester	—	946	1,248	—
14	Yorkshire College, Leeds	—	1,719	—	1,173
	Total (14 Colleges) £	1,800	5,669	3,287	10,053
			1,800		3,287
	Net deficiency (14 Colleges) £		3,869		6,766

* It may be mentioned here that the Yorkshire College, Leeds, has quite recently raised 23,000*l.*, and hopes to raise as much more, to wipe off capital liabilities. Other Colleges are making, or about to make, similar efforts.

On this basis the net deficiency of the 11 Colleges amounts to 3,482*l.* in respect of Arts and Science alone and to 5,837*l.* in respect of their whole working.

The next question is the relation of the above actual expenditure to the "necessary expenditure," to which Your Lordships refer. On this subject I have to report that examination of the accounts and inquiries on the spot have led me to regard the general administration of all the Colleges as distinctly economical. The fact that the management of each College is personally conducted by a responsible local council is in itself a guarantee that expenditure will be on lines locally regarded as necessary; and the financial straits which the above figures indicate add a presumption, which my own observations corroborate, that the general tendency is to restrict necessary expenditure rather than to encourage or to countenance profusion in annual charges. This is particularly true of the general expenses of administration,—including salaries of registrars and subordinate staff, supplies, lighting, heating, and other charges relating to the establishment outside the purely teaching staff. With regard to the emoluments of the professorial and teaching staff, information will be found in the Report of the President of Magdalen and Professor Liveing, to whom the question has been specifically referred. I may be allowed, however, to point out that, in the cases of, *e.g.*, the Owens College, Manchester, the University College, Liverpool, and the Yorkshire College, Leeds, certain professors actually receive (mainly in connection with laboratory fees) more than the principals of their respective Colleges. At the University College, Nottingham, there is a rule, which appears to work well in practice, that the total receipts of professors should not exceed a specified sum. At Manchester, also, the Owens College, unlike other Colleges, pays to professors a sum per "normal" student, based not on the sum actually received from the Education Department, but on the usual scale of fees payable by ordinary students; this entails a loss to the College.

Whether it be the first or (as I suggest) the second of the above two tables which is considered to show more truly the relation of income to expenditure, it is only the total net deficiency which can be taken into consideration. The order of individual deficiency of income in no wise represents the order of merit; and the serious failure of any one College to cut its coat according to its cloth can not, in itself, establish a preferential claim for State Aid as against a College in financial equilibrum. In other words, the poverty of one College cannot be set against the educational merit of another.

3. The manner in which the Income is expended.

Under the foregoing head I have dealt with interest on loans; and the payments in respect of scholarships call for no remark. There remain the two principal heads of expenditure, comprising about 90 per cent. of the total expenditure on Arts and Science, which are headed "Teaching Staff" and "Administration, &c." The first of these is confined to the payments made to actual teachers (principals, professors, lecturers, and demonstrators) by stipend or by fees; whilst the second head includes all other salaries, all wages, and all establishment and general charges, including apparatus, &c. for the laboratories, so far as these several items can properly be attributed to Arts and Science. The following tables show the Colleges in the order of their expenditure under these two heads.

No.	Name.	Teaching Staff.	No.	Name.	Administration, &c.
		£			£
1	The Owens College, Manchester -	19,678	1	The Owens College, Manchester -	12,765
2	University College, Liverpool - -	10,722	2	University College, London - -	6,414
3	University College, London - -	10,364	3	University College, Liverpool -	5,185
4	Yorkshire College, Leeds - -	8,574	4	Mason College, Birmingham - -	4,890
5	King's College, London - -	7,663	5	King's College, London - - -	3,947
6	Mason College, Birmingham - -	7,133	6	University College, Nottingham -	3,017
7	Durham College of Science - -	6,098	7	Yorkshire College, Leeds - -	2,493
8	University College, Nottingham -	4,762	8	Durham College of Science - -	2,327
9	Firth College, Sheffield - -	3,679	9	University College, Bristol - -	1,902
10	Bedford College, London - - -	3,656	10	Bedford College, London - -	1,898
11	University College, Bristol - -	3,435	11	University College, Dundee - -	1,880
12	University College, Dundee - -	3,369	12	Firth College, Sheffield - - -	1,550
13	University Extension College, Reading	1,554	13	University Extension College, Reading	834
14	University Extension College, Exeter	482	14	University Extension College, Exeter	133
	Total (14 Colleges) - -	91,169			49,235

If the total expenditure of the 14 Colleges on "Teaching Staff" and on "Administration, &c." be added together, it will be found that 64·9 per cent. of the combined total is due to Teaching Staff, and the balance of 35·1 per cent. to Administration, &c. In the light of this general result, it may be useful to compare the relative proportion paid by each College under these two heads. The following table institutes such a comparison, and ranges the Colleges according to the percentage they pay to Teaching Staff :—

No.	Name.	Teaching Staff.	Administration, &c.
		Per cent.	Per cent.
1	University Extension College, Exeter -	78·4	21·6
2	Yorkshire College, Leeds - - -	77·5	22·5
3	Durham College of Science - - -	72·4	27·6
4	Firth College, Sheffield - - -	70·4	29·6
5	University College, Liverpool - -	67·4	32·6
6	King's College, London - - -	66·0	34·0
7	Bedford College, London - - -	65·8	34·2
8	University Extension College, Reading -	65·1	34·9
9	University College, Bristol - -	64·4	35·6
10	University College, Dundee - -	64·2	35·8
11	University College, London - -	61·8	38·2
12	University College, Nottingham - -	61·2	38·8
13	The Owens College, Manchester - -	60·7	39·3
14	Mason College, Birmingham - -	59·3	40·7
	Average (14 Colleges) - -	64·9	35·1

These percentages can only be used with great caution; many separate factors determine the relative proportions. To take the last three Colleges for example; at Mason College, Birmingham, the remuneration of the teaching staff is stated by my colleagues in the foregoing Report to be distinctly small, and the same is also stated of Nottingham. Consequently, in both these Colleges the proportion of expenditure on general account is relatively increased. The case is otherwise at the Owens College, Manchester, where the emoluments of the professors and chief lecturers are stated to be, "generally speaking, very fairly adequate." Here the expense of the Manchester Museum in particular, and of the extensive series of laboratories, &c. in general accounts for part at least of the relatively large proportion of expenditure on administration and for general purposes. Perhaps it may be concluded that administration and general expenses should not, except for special reasons, exceed one-third of the total expenditure under both heads.

On the general subject of expenditure, I may be allowed to express my opinion that it affords an unsatisfactory basis for comparing the Colleges, and that any attempt to base State aid thereon would tend both to weaken the local management under which these Colleges have grown up and to saddle the Government with a novel and expensive responsibility.

4.—The proportion of Income to the average number of Students.

Considerable difficulty arises in dealing with number of students. The Colleges do not compare in this respect with an Oxford or Cambridge College, where every undergraduate may be presumed to be reading for a degree in Arts or Science, and where the number in residence can be accurately stated for a term or academic year. In the case of the Colleges now in question, while many students attach themselves to a College for two or more years, in order to read for a degree, there are a considerable number who give a partial attendance only, following, perhaps, a single course of lectures for a single term. It is obviously out of the question to lump together the two types of students, the regular and the sporadic; and it is difficult even to estimate the latter in terms of the former. An attempt has been made elsewhere (Appendix B.) to collect information regarding the numbers of students at the several Colleges; but, in my personal opinion, the figures do not form a trustworthy guide for determining the proportion of income to the average number of students.

In order to endeavour to comply with Your Lordships' instructions in this respect, I have approached the subject from a different point of view. As my basis, I take the fees actually paid by students in Arts and Science. The total of these fees would

in itself indicate the number of students if the fees were identical in all cases; but, as will be seen from the comparative statement of fees in Appendix A., there is no uniform scale adopted by University Colleges. Consequently, it becomes necessary to divide in each case the total of fees received by the average fee charged; and, as this inquiry relates to Arts and Science, such average fee charged has been assumed to be the mean of the annual fees payable by matriculated students reading for two years for a degree in Arts or Science respectively, as communicated to me by the several Colleges. The resulting number of students calculated by this constructive method—which I submit with all reserve as an approximation only—tends to represent actual numbers of degree students, and reduces other Arts and Science students to the same denominator. For the present purpose income is taken to mean local income arising from local endowments and subscriptions only, *i.e.*, omitting "Scholarships," the dividends on which immediately benefit the receiving student only, and tend to reappear as fees. Figures have also been added showing the proportionate cost per student for Teaching Staff and Administration combined. The order followed is that of cheapness of fees charged to students.

No.	Name.	Average Fee.	Total Fees received.	Calculated Number of "Students."	Local Endowments and Subscriptions.	Proportion per "Student."	Total Cost of Teaching Staff and Administration.	Proportion per "Student."
1.	2.	3.	4.	5.*	6.	7.*	8.	9.*
		£ s. d.	£		£	£	£	£
1	University College, Nottingham	14 0 0	2,396	171 (7)	3,625	21 (8)	7,779	45 (8)
2	University Extension College, Reading.	16 0 0	528	33 (12)	1,490	45 (2)	2,388	72 (4)
3	University College, Dundee -	16 0 3	460	29 (13)	4,363	150 (1)	5,249	181 (1)
4	Firth College, Sheffield -	17 5 6	1,503	87 (11)	2,432	28 (5)	5,229	60 (7)
5	Durham College of Science -	17 13 4	5,320	301 (2)	3,170	11 (10)	8,425	28 (13)
6	The Owens College, Manchester	17 13 9	13,442	750 (1)	16,371	22 (7)	32,443	43 (9)
7	University College, Bristol -	20 14 9	2,713	131 (10)	791	6 (12)	5,337	41 (11)
8	Yorkshire College, Leeds -	22 0 0	6,126	278 (3)	1,821	7 (11)	11,067	40 (12)
9	University College, Liverpool -	26 15 0	6,094	228 (4)	7,422	33 (3)	15,907	70 (5)
10	Mason College, Birmingham -	26 19 7	5,342	198 (6)	4,709	24 (6)	12,023	61 (6)
11	Bedford College, London -	36 12 5	4,836	132 (9)	537	4 (13)	5,554	42 (9)
12	University College, London -	39 15 6	8,259	208 (5)	6,895	33 (3)	16,778	81 (2)
13	King's College, London -	50 8 0	8,079	160 (8)	1,998	12 (9)	11,610	73 (3)
14	University Extension College, Exeter.	—†	(204)	— (14)	(400)	— (14)	(615)	— (14)
	Total (13 Colleges) -	—	65,098	2,716	55,624	—	139,789	—
	Average (13 Colleges)	24 15 2	5,007	209	4,279	20	10,753	51

* The figures in brackets indicate the resulting order.
† No fee can be given, as this College does not carry its teaching at present up to a degree standard.

On an average, as will be seen from the figures above and in the general table, each student pays about 47 per cent. of his annual cost (column 8) to his College, while local sources find 40 per cent., and the Treasury 11 per cent. But there are wide divergences from this average in individual cases, notably in the extreme cases mentioned below of Bedford College, London, and University College, Dundee; and the foregoing figures do not justify more than general conclusions. The proportion of Arts to Science Students varies with different Colleges.

5.—In connection with the financial position of the College, special regard will be paid to the possibility of making the amount of the Annual Grant in some measure dependent on the funds provided from local sources.

Under the previous head of reference I have shown the sums contributed from local sources in aid of students' fees. I do not, however, understand Your Lordships to exclude fees from consideration in the present connection. The fees paid to a College measure the local demand for the education supplied, while endowments and subscriptions express the local effort to supply that education to the student under cost price. Reference to the last table will show the remarkable divergence between the relative amounts of fees and of income from endowments and subscriptions. The extreme cases of such divergence are Bedford College, London, and University College, Dundee.

While the former shows fees 4,836*l*., and local contributions 537*l*., the latter College received only 460*l*. in fees and no less than 4,363*l*. in local contributions; in other words, the figures are practically reversed. I submit that the basis for consideration should include fees with the funds provided from local sources, and that the latter should not exclude for this purpose the annual income arising from scholarship endowments. In the following table the whole local income of each College is compared with the Parliamentary grant as now payable, the order following the proportion in which the several Colleges share in the present grant:—

No.	Name.	Present Parliamentary Grant.	Local Income, Arts and Science, 1895–6.	Proportion of Grant to Local Income.
		£	£	Per cent.
1	The Owens College, Manchester	1,800	32,301	5·5
2	University College, London	1,700	16,150	10·5
3	King's College, London	1,700	10,743	15·8
4	University College, Liverpool	1,500	13,990	10·7
5	Mason College, Birmingham	1,400	10,718	13·0
6	Yorkshire College, Leeds	1,400	8,608	16·2
7	Durham College of Science	1,200	8,671	13·8
8	University College, Nottingham	1,200	6,374	18·8
9	Firth College, Sheffield	1,200	4,106	29·2
10	University College, Bristol	1,200	3,642	32·9
11	Bedford College, London	700	5,840	12·0
	Total (11 Colleges)	15,000	121,143	12·3
12	University College, Dundee	500	4,918	10·1
13	University Extension College, Reading	Nil	2,018	—
14	University Extension College, Exeter	Nil	604	—
	Total (14 Colleges)	15,500	128,683	—

The percentages in the last column of the foregoing table suggest that, in the main, the annual grant is independent of the local income. Thus, the local income of the University College, Bristol, is only one-ninth of that of the Owens College, Manchester, whereas the latter College only receives 1½ times the sum received from the Parliamentary grant by the Bristol College. But, as Your Lordships are aware, the principle hitherto followed in the distribution of the Grant has been first to fix a minimum and a maximum limit, and then to fix the relative shares of the Colleges within such limits. This principle tends to diminish the disproportion shown above, even though the existing order of participation is not uniformly borne out by the existing facts of local income. It is evident from the above figures that, financially at any rate, the Colleges do not form a single category. The local income of the Owens College, Manchester, amounts to over one-quarter of the total local income of the 11 Colleges among whom the grant of 15,000*l*. is divided; and the combined income of the three Colleges at Nottingham, Sheffield and Bristol, barely exceeds that of the University College, Liverpool, while it falls short (by 2,028*l*.) of the income of the University College, London. These financial considerations suggest that the maximum limit of 1,800*l*. is unduly low as compared with the minimum of 1,200*l*. (which represents the liberal percentage of 29·2 in the case of Sheffield and of 32·9 in the case of Bristol). As regards the minimum, it will be remembered that the Committee of 1892 reported that "it will, in their opinion, deserve to be considered, when next "the matter is dealt with, whether the grant to any College should exceed a certain "proportion, say 25 per cent. of its income."

I have the honour to be,

My Lords,

Your obedient Servant,

ROBERT CHALMERS.

1143/97.

TREASURY MINUTE OF 5TH APRIL 1897.

University Colleges, Great Britain.—Grant in Aid.

My Lords read the Reports of the 31st December 1896 relating to University Colleges by the President of Magdalen College, Oxford, and Professor Liveing, and by Mr. Chalmers, who were appointed by the Treasury Minute of the 3rd March 1896 to conduct the several inquiries indicated in that Minute.

Their Lordships have already expressed to Mr. Warren and Professor Liveing Their high sense of the care and ability with which those gentlemen have conducted the inquiries undertaken by them, and They now proceed to consider, in the light of the Reports, the general question of the Grant and its apportionment.

The Chancellor of the Exchequer recommends to the Board the increase of the total Grant from 15,500*l.* to 25,000*l.* as from 1st April 1897. He further proposes that the apportionment of this total sum between the several Colleges which have formed the subject of inquiry should, as in former cases, be referred to a Special Committee, who should be invited to advise the Board in the matter. With the concurrence of the Lord President of the Council, the Chancellor of the Exchequer proposes the following gentlemen, all of whom have expressed their willingness to serve, as members of the Committee, viz. :—

The Right Honourable J. W. Mellor, Q.C., M.P.
Sir Henry Roscoe, F.R.S., D.C.L.
R. C. Jebb, Esq., M.P., Litt.D., &c., &c.
C. A. Whitmore, Esq., M.P.
W. J. Courthope, Esq., C.B.

He further proposes that Mr. Mellor should act as Chairman of the said Committee, and that Mr. Chalmers, of the Treasury, should be appointed its Secretary.

Lastly, the Chancellor of the Exchequer submits, for the concurrence of the Board, the following principles to which the Committee should be invited to conform in framing a scheme of apportionment :—

(i.) No grant to any College to exceed one-fourth of its local income from fees, endowments, and subscriptions for Arts and Science, provided that no diminution of any existing grant be entailed solely for this cause.

(ii.) The maximum grant to a College to be 3,000*l.*

(iii.) A College shall not be disqualified for sharing in the Grant by the fact that it is bound by Statute to demand denominational tests from all or any of its teachers.

My Lords concur.

Report of the Committee.

20 May 1897.

THE Treasury Minute of 5th April 1897 referred to your Committee the apportionment of a total sum of 25,000*l.* "between the several Colleges which have formed the subject of inquiry" under the Treasury Minute of 3rd March 1896, and laid down the following principles, to which your Committee are invited to conform in framing a scheme of apportionment, viz. :—

(i.) No grant to any college to exceed one-fourth of its local income from fees, endowments, and subscriptions for Arts and Science, provided that no diminution of any existing grant be entailed solely for this cause.

(ii.) The maximum grant to a College to be 3,000*l.*

(iii.) A college shall not be disqualified for sharing in the grant by the fact that it is bound by statute to demand denominational tests from all or any of its teachers.

The Commissioners' Reports to the Treasury of 31st December 1896 have been communicated to your Committee, who desire to acknowledge the exceptional assistance which has thus been afforded them in weighing the respective claims of the several Colleges for a share in the increased Grant. These reports, which form an important contribution to the history of higher education in this country, have been the chief guide of your Committee in the apportionment which they now proceed to propose.

(i.) Of the fourteen Colleges inspected, two, namely, the University Extension Colleges at Reading and Exeter, have not yet reached the standard in purely University work which has been reached by all the other Colleges.

Accordingly, your Committee do not propose a grant to either of these two Colleges, though they suggest that an opportunity be offered to both to invite inspection at the next revision of the Grant, if the Colleges' growth in the meantime is held to justify a claim to be treated as fully-equipped Colleges in Arts and Science.

(ii.) The case of Dundee University College is one of some difficulty. The College has a considerable endowment, it has a good staff of professors, and its equipment is adequate; but very few students are found at present to avail themselves of the education which the College offers. This is shown by the marked contrast between the annual income from endowments (4,288*l.*) and the yield from fees (460*l.*), which latter is less than one-third of the fees received from any other College to which a grant is proposed. Consequently, in any case the Dundee College would stand in a position somewhat different from that of other Colleges. Its position is rendered more exceptional by reason of its still unsettled relations to the University of St. Andrews, which shares in the statutory grant of 42,000*l.* to Scottish Universities. In view of all the facts of the case, your Committee recommend that, for the present, the Dundee College should receive the annual sum of 1,000*l.* It may be hoped that before the next apportionment the settlement of the University question may clear the way for a final decision concerning the claim advanced by the College to share permanently in the University Colleges Grant.

(iii.) As regards the remaining eleven Colleges, your Committee have endeavoured to make a distinction in their apportionment in favour of Colleges doing an appreciable amount of advanced university work, to

To the Lords Commissioners of
Her Majesty's Treasury.

which alone they recommend a maximum grant based upon the principles of the Treasury Minute of 5th April 1897. Such advanced work is necessarily a source of relatively greater expense to a College, and appears to the Committee to merit favourable recognition in any apportionment of public moneys between the Colleges.

(iv.) The apportionment which the above considerations lead your Committee to recommend is as follows:—

	£
The Owens College, Manchester	3,000
University College, London	3,000
University College, Liverpool	3,000
Mason College, Birmingham	2,700
King's College, London	2,200
Durham College of Science	2,200
The Yorkshire College, Leeds	2,200
University College, Nottingham	1,500
Firth College, Sheffield*	1,300
University College, Bristol	1,200
Bedford College, London	1,200
	23,500
University College, Dundee	1,000
Total	£24,500

(v.) The above allocation leaves a balance of 500*l.* out of the total sum of 25,000*l.* In recognition of the pre-eminence of the Owens College, your Committee recommend that this sum of 500*l.* be added to the 3,000*l.* assigned to this College in accordance with the Treasury Minute.

(vi.) Your Committee observe, from the reports of Mr. Warren and Professor Liveing, that while there is a wide difference between many of the Colleges both as regards the numbers and the emoluments of the staff, the educational results produced are, as a rule, proportioned to the equipment of each college in these respects. They recommend, therefore, that in each of the following Colleges, at least three-fourths of the increased share in the Parliamentary Grant be allocated solely for the purpose of either increasing the numbers or improving the emoluments of the staff, or both:—

Mason College Yorkshire College Nottingham College	For increasing numbers and emoluments of staff.
King's College Firth College Bedford College	For increasing emoluments of staff.

In the case of the following—Owens College; University College, Liverpool; University College, London; Durham College of Science,—the Committee are of opinion that the grant may be paid without conditions.

(vii.) In conclusion, your Committee suggest that the apportionment should be for a term of five years, and that a further inspection should be made before the end of such term.

(Signed) John W. Mellor.
Henry E. Roscoe.
R. C. Jebb.
C. A. Whitmore.
W. J. Courthope.

Robert Chalmers,
Secretary.

* Evidence has been laid before the Committee that increased endowment will raise the income of Firth College by about 1,000*l.* a year beyond the sum specified in the Financial Report to the Treasury.

8432-97.

TREASURY MINUTE OF 2ND JUNE 1897.

University Colleges, Great Britain.—Grant in Aid.

My Lords read the Report of the 20th ultimo from the Committee appointed by the Treasury Minute of 5th April last to advise This Board in the matter of the apportionment of the increased sum of 25,000*l.* which Parliament has been asked to vote in the current financial year for University Colleges in Great Britain.

My Lords accept the apportionment which the Committee propose, viz.:—

	£
The Owens College, Manchester	3,500
University College, London	3,000
University College, Liverpool	3,000
Mason College, Birmingham	2,700
King's College, London	2,200
Yorkshire College, Leeds	2,200
Durham College of Science	2,200
University College, Nottingham	1,500
Firth College, Sheffield	1,300
University College, Bristol	1,200
Bedford College, London	1,200
	24,000
University College, Dundee	1,000
Total	£25,000

In deference to the express recommendation of the Committee, My Lords have consented to grant to the Owens College, Manchester, a sum in excess of the maximum of 3,000*l.* specified in the Board's Minute of 5th April 1897. They desire, however, to make it clear that this increase is made solely in recognition of the preeminence of the Owens College, and must not be construed as a precedent for increasing the grant of any other College beyond the normal maximum.

My Lords take note of the terms of the Committee's Report with regard to the Dundee College. In acceding to the Committee's recommendation that "for the present" the College should receive 1,000*l.* a year, My Lords are guided, as they understand the Committee to have been guided, by the exceptional position in which the College is now placed with regard to St. Andrews University. My Lords, however, are of opinion that, when the relations between the University and the College are settled, this matter should be subject to reconsideration; and They must not be understood to admit the claim of the College to share permanently in the grant to University Colleges.

The Board accept, so far as They are concerned, the recommendation that, with the exception of Dundee College, the above allocation should be settled for a term of five years from 1st April, 1897. They also agree that before the end of such term a further inspection should be made on behalf of the Treasury.

My Lords will communicate to the Colleges concerned the Committee's recommendation in paragraph vi. of their Report that, in certain cases, three-fourths of the additions to the several grants should be devoted to staff purposes.

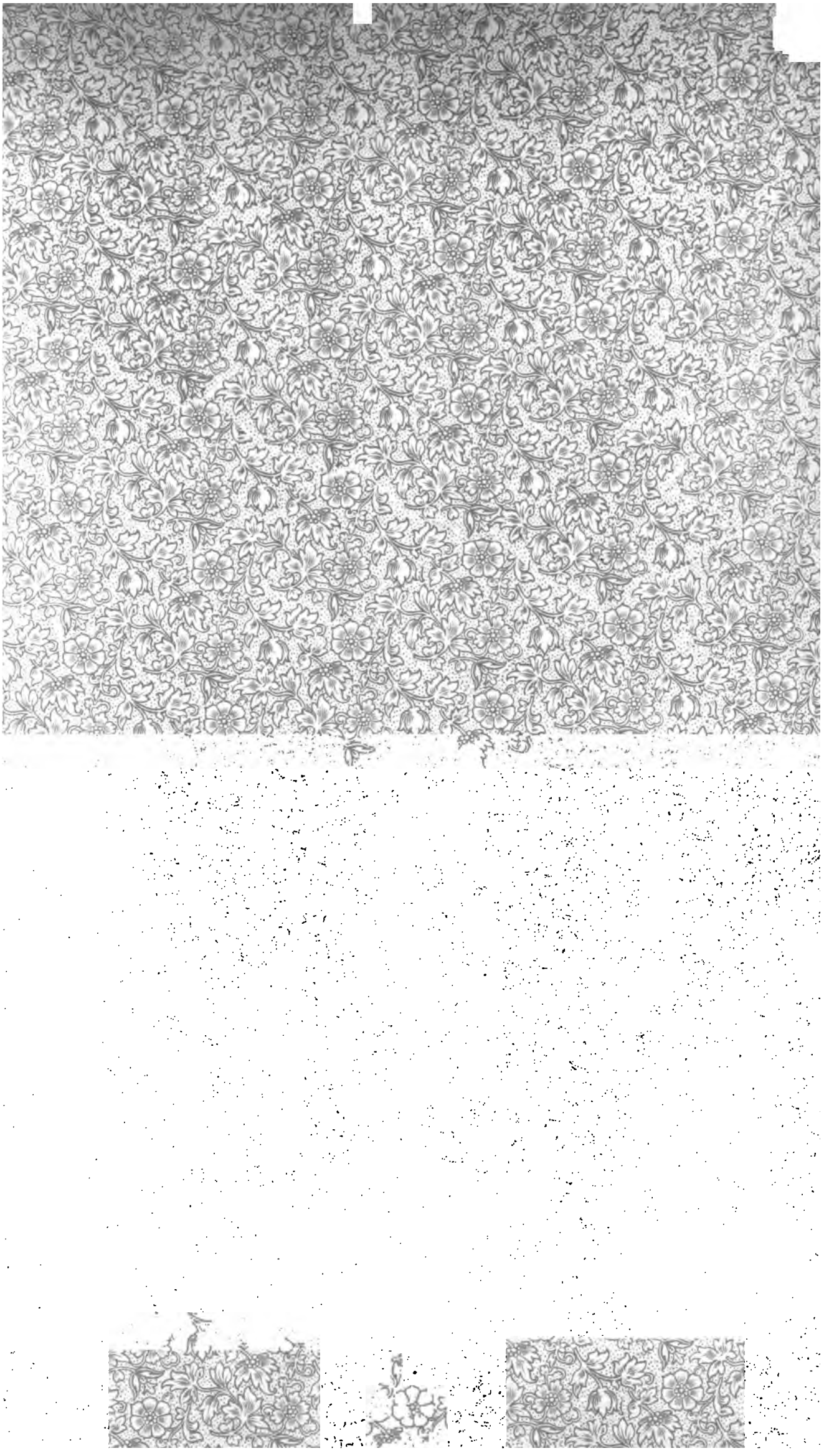
The future inspection, as recomended by the Committee, should extend to the University Extension Colloges at Reading and Exeter, as also to the Hartley Institute at Southampton, and to any other College which, being located in a populous district, may claim to be treated as a fully-equipped College in arts and science.

The Chancellor of the Exchequer invites the Board to consider the qualifications, other than educational, which should be required from a College seeking to share in the Grant in future. The Chancellor of the Exchequer submits to the Board that public money should not be contributed to a College which is still in the experimental stage or which has not yet succeeded, though fully equipped, in attracting a considerable number of students in Arts and Science. He therefore recommends that the financial conditions of participation should be—

(i) a total local income for Arts and Science of at least 4,000*l.* a year; and

(ii) a receipt from fees in the same subjects of at least 1,500 a year.

My Lords approve. It only remains for Them to record Their appreciation of the valuable services which the Committee has been so good as to render to This Board in considering the claims of the respective Colleges.



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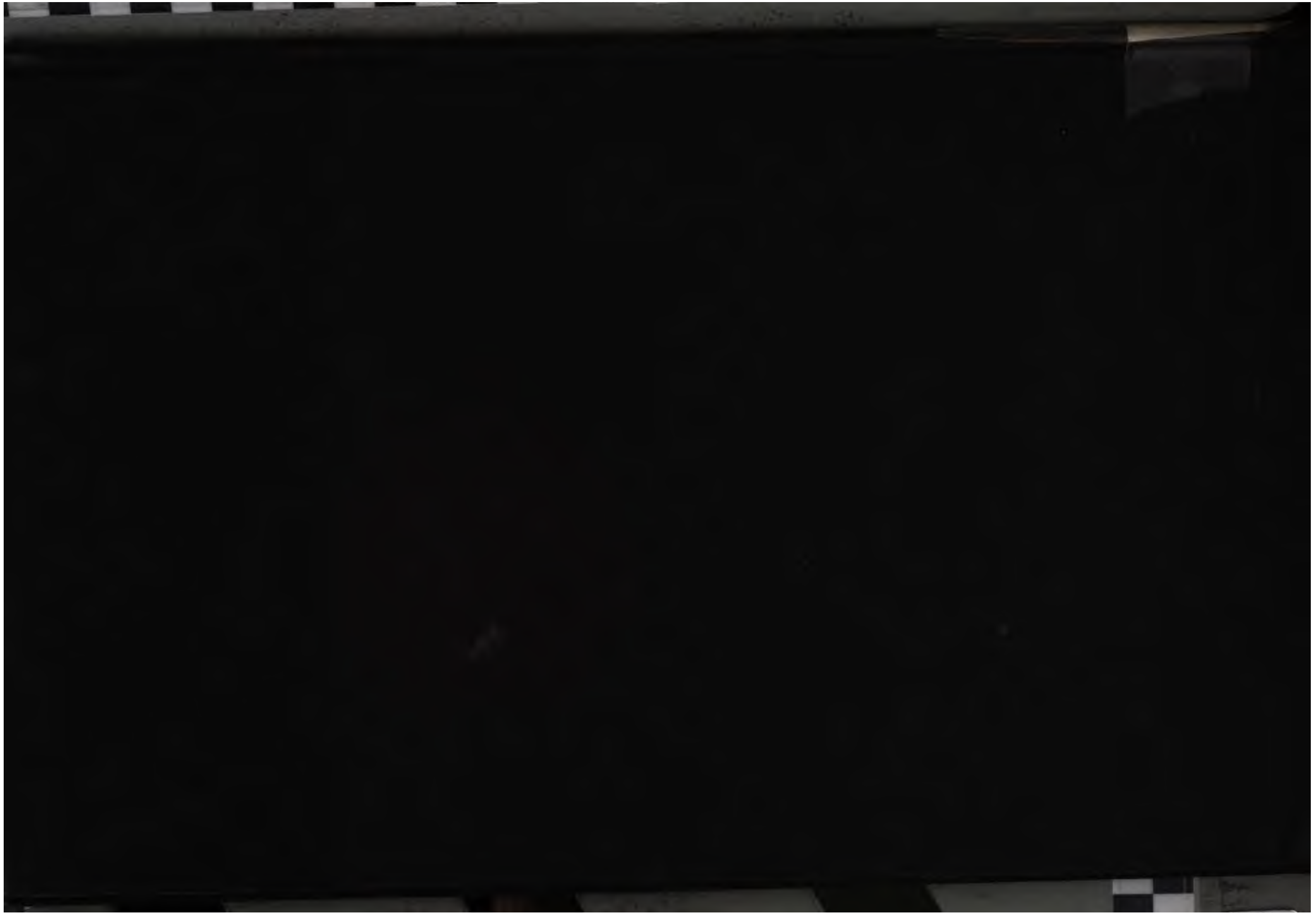
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